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ABSTRACT

Current issues in educational uses for microcomputers are addressed in this collection of 139 abstracts of papers in which computer literacy and practical applications dominate. Topics discussed include factors related to computer use in the classroom, e.g., computer lab utilization; teaching geometry, science, math, and English via microcomputers; applications of microcomputers in vocational or special education; and teaching online bibliographics searching. Several papers examine such innovative computer activities as robotics, interactive video, videodiscs, authoring systems, and artificial intelligence. Additional papers discuss the management of computer resources in K-12 and postsecondary settings, problems caused by the increased use of technology in educational systems, computer graphics, computer programming, networking, computer literacy for faculty and staff, software evaluation, and instructional design. Each abstract contains the name and address of the person to contact if more information is needed. An alphabetical index of presentors is appended. (JB)

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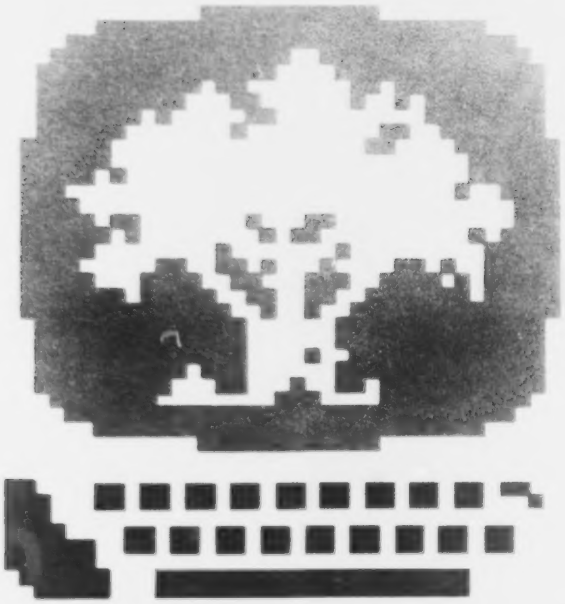

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Abstract Proceedings of the 1986 Florida Instructional Computing Conference

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The Florida Association of Computers in Education

Preface

As the 1986 Florida Instructional Computing Conference so graphically illustrates, educational computing practices continue to gain momentum throughout the country. This year's presentations again bring new evidence of successful applications of computers to many perennial problems in education. A few presentations, however, address the problems *caused* by the increased use of technlogy in our educational system. Presenters focus on copyright issues and the struggle to meet the requirements of Florida's new minimum standards in computer literacy. The 1986 FICC Proceedings document the trials as well as the triumphs presented by computers in education.

The Office of Educational Technology in the Florida Department of Education is again responsible for developing and presenting one of the most high-quality instructional computing conferences in the country. The professional work of Earl Morrogh of Creative Services in Tallahassee, Florida, is once more evident in the Proceedings. And, as in previous years, the Conference and this editor are grateful to the presenters of the Florida Instructional Computing Conference for their role in making this endeavor a uniquely successful and profitable one.

M. D. Roblyer
Florida A&M University

Editor,
1986 FICC Proceedings

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Voc Ed Teachers - Can You Afford Not To Use Public Domain Software?

Janice R. Sandiford, Ph.D., Florida International University

Many schools have purchased micro computers during the past 5 years. Funds for these purchases come from a different source than funds for software. Often software funds are in short supply and high demand. By the time funds reach vocational programs there may be none left. The vocational teacher must find innovative ways to cope with this common problem. One way is to use "public domain" software available free or for minimal cost and able to be duplicated as often as necessary.

This presentation focuses on using and modifying public domain software to expand the vocational software library. Many useful programs are readily available from the state, user groups and fledging programming students. Sources will be identified for participants.

On some occasions, software can be modified to fit objectives of vocational programs particularly in the "drill and practice" areas. A demonstration of procedures to use to modify software shows participants how they can have a large software library.

When funds are limited, public domain software is an alternative that provides the teacher with materials to use with the computer and the students have an opportunity to use it. A software library can be expanded at minimal cost.

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Using the Multiplier Effect: A Curriculum to Train Trainers in Instructional Computing

M. D. Roblyer, Florida A & M University
Robert C. Clark, Florida State University
Jeanne Barker, Maclay School

This presentation discusses the procedures and products of the Florida Model Microcomputer Trainer Program (FMMTP), a project designed to develop training materials and use them to train educators in the effective use of microcomputers in schools. The personnel trained in this way will then become trainers in their own organizations. This project was originally funded by the State of Florida Department of Education under the 1983-84 Programs of Excellence grants in Math, Science, and Computer Education, and was subsequently re-funded for 1984-85 and 1985-86. The program is a joint effort on the part of Florida State University, Florida A & M University, Leon County School District, and the Maclay School.

The directors of the project describe the procedures used to develop the major product of the FMMTP: a 450-page training manual produced during the first year of the project, and containing 21 instructional units in three major areas:

1) Microcomputer operation and study of microcomputers
2) Instructional applications of microcomputers
3) Instructional management and administrative applications

Each module consists of instructional objectives, lesson plans, lesson narrative (readings), lesson activities and exercises, recommended materials, and posttests. In addition, media (slides and video-tapes) are currently being developed to supplement the curricula and make it more transportable.

During the summers of 1984 and 1985, the instructional materials were used to train more than 150 educators from all over the State. Three two-week training sessions were held each year. The results of the evaluation of these workshops indicate that they were generally successful in achieving their instructional goals, and that they were perceived as effective and useful by the participants. Information on how to obtain the curriculum materials at the end of the project is discussed.

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Administrative Computing --- What and When

Alan T. Olkes
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Over the past years, school systems have tried to emulate their counterparts in the private sector by automating many of the business functions of a district. Usually payroll and general ledger are the first major applications, followed by a multitude of smaller systems centered around inventories, facilities or accounts payable. The automation of student records has grown out of programs originally designed for grade reporting and/or scheduling at the senior high school level. Little thought has been given to a total package including all the necessary data elements, data base design and reports.

To realize the full potential of a computerized system thought must be given to a total integrated approach. However, both the cost and magnitude of initiating such a project is overwhelming. This session, which is an abbreviated edition of a workshop presented earlier, explores the concept of total integration and the many possible routes a district may take to get there. This includes what Mr. Olkes refers to as the center core (budget) and three major areas of student, staff and finance.

Many districts throughout the nation have surveyed their administrators to determine their automation needs and to set priorities. Typical of the responses is this list from the Great River Area Education Agency in Burlington, Iowa.

1)	Revenue/Expenditures	9)	Inventories
2)	Payroll	10)	Attendance (Elem.)
3)	Attendance (Secondary)	11)	P. O. and Vouchers
4)	Grade Reporting (Secondary)	12)	Transportation Records
5)	Budget Preparation		
6)	Scheduling (Secondary)	13)	Grade Rptg. (Elem.)
7)	Personnel Records	14)	Transcripts (Sec.)
8)	Student Records (Sec.)	15)	Budget Prep. (Sec.)

Questions must be asked concerning the appropriateness of the list in light of the return on costs (either in real dollars or increased productivity) and that application's fit in the total ~~system~~.

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ENHANCING THE THREE R'S THROUGH A COMPUTER BASED CURRICULUM

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Many early childhood educators have found that it is less difficult for a child to type a letter with a single stroke, than it is for him to write a letter. Further, they have concluded that word processing will not help children write better if the physical process of typing their compositions into the computer is as tedious and frustrating as the re-copying process has always been. They agree that the first skill required to operate a computer is facility with the keyboard.

Two school districts were selected to pilot elementary typing programs in 1984-85. One school had computers in the classroom, while the other school had a shared computer-lab situation. Five teachers, a librarian, three parent volunteers, and 180 children (ages 7-9) participated. Worksheets were provided for the children and a teaching guide was provided for each teacher or parent. The Rainbow Keyboarding program materials were used from September to May in the shared computer situation, and used from January to May in the school where there were computers in the classroom.

The Rainbow Keyboarding program centers around an exciting, imaginative space story that builds throughout the program. The story captures the interest of the students as it improves their computer keyboarding skills. Children are actively engaged in skill building activities, such as placing sticker keys on the Keyboard-on-the-Wall, reading rhythmic poems as they type, and typing messages to outer space. Ideas are presented for reinforcing basic reading, writing, and arithmatic skills, as well as spelling, flowcharting, and programming.

Children in the classroom setting (School A) were exposed to the program for half-hour sessions, three times per week. Children were encouraged to practice at home as well as to practice their worksheets during free time or upon early completion of assignments. The children were provided with keyboards which they could utilize if there were no actual keyboards in the home. The teacher could utilize the science, math, or spelling period to teach or reinforce the lessons, as different lessons pertained to these content areas.

Children in the lab setting (School B) received formal instruction one day per week during their library period. Classroom reinforcement as well as take home practice sheets were provided. Computers were available to the children in the library during their free time, and before and after school.

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Microcomputers Provide Macrolearning for Language Impaired/Learning Disabled Students

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The microcomputer brings together in one device many of the features long envisioned for instruction of handicapped and special needs students. As an educational tool, it can provide a motivating and sustained multisensory approach to learning, simultaneously tapping the visual, auditory and tactile/kinesthetic channels. The microcomputer is a truly interactive, personal tool that teaches remembers, reviews and rewards its student operators - the learner.

One special project in Pinellas County, Florida, has demonstrated the great learning advantage computers can provide to special needs students manifesting language impairment and/or learning disabilities. Teachers involved in the program have found the microcomputer to be a motivating teaching tool which supports development in basic skill areas as well as broad language/content areas, both within the special education classroom and in the mainstream. More than 120 students participated in the project. Enrolled in grades PreK through 5 and ranging in age from 3 to 13 years, the students used the microcomputers daily for studying academic basic skills through drill-and-practice and tutorial activities.

Marked improvement was noted early, reversing the trend of frustrated students unwilling to participate in the learning process. More importantly, significant increases in the rate and degree of learning were documented in all skill areas targeted by the project. Specifically, the dismissal rate for students demonstrating enough progress to function in the mainstream without special education support was 4 times as high as in previous years. Overall, student achievement was 3 to 4 times as high as that attained without the addition of a microcomputer element in reading and language arts areas. For the sample of elementary aged students studied, mean gains in standard score points used to measure achievement increased from a -3.765 to +11.588.

The purpose of the session is to describe the comprehensive program design used by this exemplary program and to share specific instructional techniques and adaptations. It will highlight the resulting reading and language arts curriculum sharing goals, objectives and software selection ideas for the following instructional areas: (1) reading readiness; (2) sight words; (3) structural analysis; (4) critical reading comprehension; (5) spelling; and (6) writing. Participants will develop an appreciation for successful introduction and implementation techniques, lesson design, materials, methods for classroom management and an understanding of the instructional framework which contributed to program success.

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Meeting Needs of Faculty: Future Directions for the University of Florida's Faculty Support Center for Computing

Wayne A. Wolfe, University of Florida

Two faculty surveys, accompanied by two-and-a-half years of utilization data, gage the extent to which faculty have acquired new computing skills and indicate future directions for the University of Florida's Faculty Support Center for Computing (FSC). Resulting from a joint study between the IBM Corporation and the University, the FSC is beginning its third and final year of operation under the study. The long range goal of the FSC is to provide all faculty easy access and appropriate training to use computing as an intellectual tool in their respective disciplines. With strong faculty and administrative support, the continuation of the FSC, at the conclusion of the joint study, is not in doubt.

Teaching faculty to develop traditional computer assisted instructional material has not been emphasized. The FSC feels that one of the most effective ways to get faculty to use computers is to teach tool usage and accompanying skills and, then, assist faculty in developing instructional material which will permit students to use those same tools in their learning process. This approach appears to have a higher payoff for the teaching/learning process than traditional computer assisted instruction.

The primary means the FSC is using to accomplish its goal is through instructional and training seminars in the use of computing, both personal computers and mainframe interactive services. Two-and-one-half years of utilization data show that over 1,600 of the 2,400 fulltime, on-campus, faculty have attended at least one seminar.

A recent survey of FSC users indicates there is a high degree of satisfaction with the instructional program and that over 50 percent of the surveyed users have acquired computers in the last two years. The original introductory courses are not losing their audience: during each of the eight semester terms of operation, the FSC has attracted 200 new users. However, to meet the future needs of a more sophisticated user group--those faculty who regularly visit the Center--our curriculum cannot become obsolescent; it must be dynamic. Keeping the curriculum current is a challenge and our recent user survey indicates future directions for the FSC.

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COMPUTER LITERACY - A COURSE FOR LIFE

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Sue Galloway, Perry Middle School
Tanya Martin, Apollo Middle School

This presentation discusses the Broward County Computer Literacy Guide, which was written by six Broward County Middle School teachers, during the summer of 1985. The guide is made up of five individual units and an appendix of resource materials and a glossary. Each unit includes information, activities, and tests that satisfy the Minimum Basic Skills and Standards of Excellence proposed by the State of Florida, for adoption for the 1985-86 school year.

This middle school literacy guide is an attempt to provide information and activities which will expose students to the multifaceted world of computers. The five units contain background information, lesson plans, procedure sheets, and activities for the students to do at their seats and at the computers.

Contact for further information:
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New River Middle School
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After Better BASIC -- Pascal

Marvin Hinshaw, Nova High School

To provide continuity from last year's "Towards Better BASIC," this presentation begins with a review of what characteristics of a program written in BASIC "make it better." Items such as top-down design, the use of structured programming constructs, and helpful, informative documentation all contribute to making a program easier to follow and understand, to test, and to modify and enhance. To help illustrate these concepts a sample program written in "structured" BASIC will be discussed. The sample will also be used to point out some of the weaknesses inherent in BASIC.

The qualities of good programming, and those that a good programming language should support, lead naturally to an introduction to Pascal; its history and its features. The introductory program is then shown written in Pascal and is used to illustrate the power of the language: program design implemented using procedures and functions; the programming constructs sequence (input/output, assignment), choice (if/then/else and case), and iteration (while/do, repeat/until, and for/do); and the use of parameter passing to procedures and functions. Mention is also made of the powerful data structuring capabilities of the Pascal programming language and some of its advanced features such as recursion and dynamic storage capabilities.

Finally, the Pascal programming environment is discussed with time devoted to several of the more popular microcomputer implementations and their extensions to the standard language.

For further information contact:
Mr. Marvin Hinshaw
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3600 College Avenue
Davie, Florida 33314

Computer contests and how to prepare for them

Nancy Barba, Broward County Schools
Judy Kravitz, Broward County Schools

This presentation discusses what competitions are available for students and gives some helpful hints on preparing students for these computer competitions. Specifically the session will

1) provide information on programming contests, literacy contests, academic contests, utilizing the computer, and contests combining programming and short answer questions on topics covering basic areas in computer science,
2) provide information on contests available for both beginning and advanced students,
3) provide information on contests available for elementary, middle, and high school students,
4) present techniques for preparing students for those contests.

This session is designed for all computer teachers who wish to

1) give their students positive experiences beyond the classroom,
2) provide their students with competitions different from athletics, mathematics, music, and

3) create additional computer problem-solving experiences for their students,
4) provide means for their students to practice basic computer skills,
5) recognize their outstanding students,
6) inform the public about their computer program,
7) provide a talent search for their outstanding students.

Contact for further information:
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Developing an Interactive Video CAI Curriculum: Three Years Exp.

Bob Baird, University of Central Florida
The IV-CAI Development Team of Dover Shores Elementary School,
Orlando, Florida

This presentation discusses the experiences of a group of elementary school teachers from Dover Shores Elementary in Orlando, FL who have spent the last three years developing a computer assisted instruction curriculum utilizing interactive video. The team discusses the key stages that a school goes through in developing and implementing an interactive video CAI curriculum in an elementary school setting.

The presenters describe the necessary equipment which must be acquired for the project to begin. This is a stage with many pitfalls since often times the hardware arrives broken and the provided documentation often is gibberish. Next the group discusses the training that is needed in order to produce useful instructional packages. This includes needs definition, access to materials, systems instructional design, and formal CAI training as well as mastery of the interactive video hardware. Finally, the group discusses how to select and package curriculum materials appropriate for the interactive video environment. This includes avoidance of copyright hassles, etc.

Demonstrations of the hardware used by the Dover Shores group, along with selected materials from the CAI library now housed at Dover Shores, are included in the presentation.

Contact for further information:
Bob Baird
College of Education - Ed. Foundations
University of Central Florida
Orlando,FL

Overview of DSS (Decision Support Software)

Linda Dowell, St. Johns River Community College, Orange Park Center
Peggy White, St. Johns River Community College, Palatka

At St. Johns River Community College the Introduction to Microcomputer Applications course (a hands-on experience) fulfills many objectives including (1) computer experience required of all AS degree candidates, (2) computer experience for all AA degree candidates, (3) a vocationally oriented course for individuals who are preparing or updating skills for office employment, and (4) a course for the public to acquaint them with the most popular uses of a personal computer.

An explanation of computer hardware and DOS begin the course and provide the students with an opportunity to learn what a computer is and the vocabulary associated with computers.

DSS (Decision Support Software) includes data base, spreadsheet, and word processing software. Due to the diversity of software and time limitations of the course, each area is covered at elementary to intermediate levels. Word Star is the primary word processing package used while PFS Write is demonstrated to show another level of word processing. dBase II is the primary data base package while a menu driven package with a control system, Data Ease, is demonstrated. VisiCalc is the primary spreadsheet package and Lotus (including graphics) is demonstrated.

The presenters will also show how a wide screen projector can be used as a teaching tool for computer instruction. The presentation will include details on how to operate the projector as well as a demonstration of course software using this projector.

Details of how to present a non-credit short course (12 hours) on DSS will be discussed. The short course covers all areas of interest--word processing, spreadsheets, and data bases. Lesson plans and activities used to teach this course during the summer of 1985 will be reviewed.

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Minimum Student Performance Standards for Computer Literary: Is It Possible?

Betty D. White
Duval County Public Schools

This session discusses issues related to districts preparing to meet the challenge of designing and implementing appropriate instructional programs which will enable students in grades 3, 5, 8, 10 to master Minimum Student Performance Standards for Computer Literacy.

The proposed standards and skills have been reviewed and revised by reviewers from each district and the final revision has been sent to the Florida State Board of Education. Educators are concerned about what they should be doing and when should it be done.

The level of teacher competency, inservice and the issue of whether teachers should be required to be at the mastery level of their students is also a concern.

Examples of how standards and skills, not requiring the use of computers, can be integrated into existing curriculum areas is presented. Scheduling of hands-on experiences with computers and grade level instruction activities for standards and skills requiring the use of a computer will be shared.

Participants will have an opportunity to discuss the reality and probably of solving the following factors which might influence the implementation of a computer education program.

1. availability of computers
2. teacher training
3. enthusiasm of teachers
4. time
5. preceived importance of computer education
6. administrative support

Betty White, Supervisor
Elementary Programs
Duval County Public Schools
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USING F.I.R.N. IN AN INSTRUCTIONAL SETTING

Bret Krebeck, Manatee Community College - South Campus
Gene Reck, Manatee Community College - South Campus

This presentation discusses the resources available to educators through the Florida Information Resource Network. Emphasis is placed on applications which contribute to the students' experiences in the classroom. The major thrust of this demonstration is to make educators more aware of the computer resources currently available to them.

This presentation will include demonstrations in three major areas:

1) Use of Remote Software and Computer Resources
2) Use of the Microcomputer Software Review
3) Use of the Science Test Bank Database

Each demonstration will point out some of the educational benefits of the particular area being discussed.

The primary thrust of this demonstration will be in the area of computer science. Topics will include file transfer techniques and linking microcomputers to minicomputers and mainframes. Sharing of compilers and other computer resources will be discussed.

Another topic will demonstrate how educators may use FIRN to locate information and reviews on software packages that are of particular interest to them. Educators may specify the type of computer, the area of interest, and the level of difficulty and receive all applicable reviews on their computer screens. This information is especially useful when considering the purchase of new software.

Yet another topic will be a demonstration of how educators in the area of science may use a database of science test questions to construct their tests. This is essentially an electronic test bank. It is yet another resource which is available to educators through FIRN.

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Together We Can Do It! A Community College-Public School Partnership for Business Education Computer Training

Maureen Lukenbill, Miami-Dade Community College, South Campus
Fred Reed, Dade County Public Schools

This presentation describes the Computer training partnership model developed by the South Campus of Miami-Dade Community College and Dade County Public Schools. This model was implemented to train Business Education, Vocational, and Adult Education Teachers in the use of WordStar and PC-File. This project was funded by the State of Florida Department of Education under the 1985-86 Programs of Excellence in Mathematics, Science, and Computer Education.

The presenters discuss the procedures used to promote the project, select the participants and provide incentives for the participants. The training model developed as well as the materials developed and used are presented. An overview of the content in each of the ten WordStar sessions and the five PC-File is described.

The information needed for replicating this model is shared along with the plans for the continuation of this training partnership.

Contact for further information:
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Faculty, Staff and Program Development Office
Miami-Dade Community College, South Campus
11011 SW 104 Street, Miami, FL 33176

COPYRIGHT AND YOU!

Gary H. Becker
Director of Media Services
Seminole County Public Schools

Provides guidelines as to permissable uses of copyrighted materials as well as restrictions on their use. Examples are provided along with clear information on such areas as computer software duplication, networking, videocassette rental, etc. Handouts provided indicating resource material.

COPYRIGHT AND YOU is intended to provide clear guidelines for educational use of all materials, not just computers. The information presented provides fair use criteria and guidelines as well prohibitions. Procedures for writing for copyright permission are presented and suggestions made for developing institutional policies. This session is designed for those individuals who have not had exposure to the overall implications of the copyright law for educators.

Contact for further information:
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USING COMPUTERS TO TEACH CRITICAL THINKING SKILLS AND FITTING CRITICAL THINKING INTO THE CURRICULUM

Marge Kosel, Sunburst Communications

Problem solving is, and should be, a major objective in schools and home. But problem solving in most textbooks is ambiguous. "Problems" in most math textbooks aren't really problems. They are computational exercises disguised in words: "Two boys each ate four hamburgers..." Such activities are trivial so far as problem solving is concerned. Most of us rarely have to solve a "word problem" in our adult lives.

So what is problem solving? It is the ability, willingness and confidence to make sense out of a novel situation and devise alternatives to reach a goal. The construction of alternatives, not the repeating of formulas, is what thinking and problem solving are all about. But what are the specific skills of problem solving? How do we teach them? And how do we fit problem solving into our curriculum? Teachers already complain of so little time to teach the basics. And the public is putting pressure on educators to get back to basics. How do we justify problem solving as a critical part of education? How do we then approach the teaching of this sometimes abstract skill in a more concrete way?

These questions are the basis for a discussion presenting practical classroom ideas.

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Venture into Problem Solving with Construction Sets

Kristen E. Ellington, Elizabeth Cobb Middle School, Tallahassee

The presenter discusses construction set software and its use as an aid to developing problem-solving skills.

The children in our schools today will need to be effective problem solvers to be competitive in the job market of the 1990's. The growth of knowledge in our world is outpacing updating of our curriculum. Our students need to learn to be independent learners with an internal locus of control so that when they are faced with an unfamiliar situation, they will have the mental resources to know how to deal with the problem. On a practical level, this independence leads to increased success and achievement in school.

Construction set software is a subset of computer tools. This type of software allows the student to use the computer for creative problem solving. The construction sets provide the user with components, or puzzle pieces, and the ability to move them about and connect them on the screen. They may be used to create computer music, images of electronic components, computer games, interior home designs, robot and chip designs, and so on.

Use of construction set software requires the practice of many problem-solving skills. Examples of the skills and how this software type helps in student acquisition of these skills are discussed.

As students work with these construction sets and develop their problem-solving skills, they also are exposed to many content area skills. The presenter examines this application to content area instruction, providing specific examples of skills and software. To effectively use this software to enrich content area instruction, teachers may need to develop correlating lesson materials. Suggestions are given for appropriate types of supplemental activities.

Examples of lessons using such construction sets as ROBOT ODYSSEY by The Learning Co., PINBALL CONSTRUCTION SET by Electronic Arts, SONGWRITER by Scarborough Systems, and others are presented and available to attendees in a handout.

Contact for further information:
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The New "True" BASIC

Ray Cafolla,
Florida International University

In 1963, Kemeny and Kurtz designed the BASIC language to be a general purpose, universal language that would be easy to learn and use. Early implementations of BASIC on microcomputers were hampered by the limited memory of these machines. As a result, each version of BASIC was forced to make compromises. As microcomputers became more powerful, new features were added to BASIC. As a result, BASIC has evolved into many "dialects". Kemeny and Kurtz have decided that a new standard is needed. They have designed a new BASIC called "True BASIC". This presentation will discuss the features of this new version of BASIC.

True BASIC is designed to conform with ANSI standards for the BASIC language. The language is machine independent including input/output functions and graphics. The language encourages a structured approach to computer programming by providing the following features: 1) local and global variables, 2) block structures (sub..end sub : def func), 3) loop structures (do..loop until : for..next : do while..loop) and 4) branch structures (if.. else..endif : select case..end select).

Specific examples will be provided to illustrate these structures.

It does not seem likely that this new "True" BASIC will replace the old. True BASIC has not been burned into the ROM of any microcomputers. In fact, the software is quite expensive. The old BASIC is free with the microcomputer. Other languages like Turbo Pascal are less expensive than True Basic, and these languages may meet the need for a structured language as well as True BASIC.

The prestige of Kemeny and Kurtz will undoubtly help True BASIC find its place in the computing community. The above objections could easily be overcome by more aggressive pricing of True BASIC, or by licensing the language to hardware developers to be included with the purchase of a computer.

For further information contact:
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Florida International University, Broward Campus
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Fort Lauderdale, FL., 33314

Elementary Computer Curriculum Activities and Computer Lab Utilization

Ann Fee, Broward County Schools, Bayview Elementary
Jennifer Freeland, Broward County Schools, Instructional Computing
Pamela Garwood, Broward County Schools, Instructional Computing

This presentation includes techniques for the development of computer curriculum and utilization of the computer lab at the elementary level relating to the minimum performance standards proposed by the state. Emphasis is placed on Logo Activities for primary students and teacher directed delivery model.

During the summer of 1985, a writing team of classroom teachers developed additional elementary computer materials and activities to enhance the existing computer curriculum. District personnel describe and show these materials which include (but are not limited to) the following:

1. Elementary computer curriculum activities for primary students utilizing MECC E-Z Logo in a computer lab

2. C.H.I.P. (Computer Handbook: Implementation Procedures)- a handbook for classroom teachers which includes suggested computer lab management techniques

Contact for further information:
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Involving People In The Development Of District Wide Computer Users Plan

Wally Cox, Principal/Middle School
Richard Farmer, Coordinator/Secondary
Edward Pipon, Principal/Elementary School
Calvin Smith, Principal/High School
Jim Smith, Coordinator/MIS and Planning

If teachers and administrators are going to promote, support and implement computer technology they need to:

1. grow in their knowledge of technology,
2. be involved in the decision making process and
3. use a systematic process for three year planning.

A 3 - 5 year plan should include:

1. Goals (system)
2. Objectives
3. Status
4. Sections or subsystems
5. A series of ordered and inter-related events for each section. Each event should include event name, beginning and target dates, description, person responsible and resources needed.

Additional Information

Highlands County, using the approach briefly stated above, has developed a three year Computer Users Plan. This plan was presented to and discussed by the School Bord, served as a communi-cation tool between schools and departments and lastly was the basis for reflecting computer needs into the appropriate sections of the budget.

Highlands County has moved in just two years from little use of computers to a fairly sophisticated series of both instructional and school level administrative computer applications. Whats more important, the plan has the support of teachers, school level administrators, the school board and district level staff.

The presentation by members of the committee includes a detailed step by step description of the planning process. Copies of the plan are available.

Contact for additional information:
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Using the Renumber, Hold and Merge Functions to Encourage Structured Programming Techniques in BASIC

Ann Campbell, Computer Lab Teacher
Eastgate Middle School
North Kansas City (Missouri) School District

This presentation explains the Apple Renumber, Hold & Merge utility programs and their use, both in simplifying programming tasks and in facilitating the teaching of Structured BASIC. Those attending will receive detailed instructions (handouts) explaining the actual use of the utilities programs and copies of BASIC programs developed using the utilities. The following specific areas will be covered:

1. Actual instruction on HOW to use the Renumber, Hold & Merge utilities

2. Examples of WHEN, WHY and HOW to use these utilities in specific programming situations. In every case, printed copies of examples cited will be available. Topics addressed by the presenter will include:

    1. Use to avoid retyping of similar program segments when only minor changes need to be made. A graphics program will be used as an example.

    2. Use to transfer frequently-used subroutines from disk into programs as needed.

    3. Use to demonstrate and encourage modular programming in the BASIC language. In this application, students may each write segments of a program which is then merged into one master program. The resulting product is often a program beyond the scope of most individual students.

    4. Use to encourage the use of structured programming techniques in BASIC. Structured programs consist primarily of remarks, a master driver program, and subroutines. Putting this type of program together is simplified when subroutines can be developed independently and merged with a driver program.

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Computerized Marine Ecology of The Florida Keys

Christina L. Yahn
Stanley Switlik Elementary School
Marathon, Florida 33050

Through the use of a slide presentation, Computerized Marine Ecology describes the active participation of elementary students in the Florida Keys, merged with the application of a marine ecology database, to increase students' and teachers' knowledge of both the environment and computer applications.

This two year project was funded through the"Wheels for the Mind" grant from the Apple Education Foundation. The project has been a joint effort on the part of Barry University and participating schools in Monroe County.

This presentation describes the field trip experiences used to gather data for the creation of a Marine Ecology Database, which provides the framework for a variety of student and teachers learning experiences. Students utilize word processing and spreadsheet applications to express the outcomes of research and experiments. Through participation in workshops and classroom lesson development, students and teachers develop curriculum materials for use in Grades 4 - 6 science classes. Modem communication was introduced to communicate data research to participating schools.

State funds enabled Stanley Switlik to operate an environmental summer camp; providing students with additional field experiences, training in Apple Works Application and learning the authoring language Super Pilot. Students traveled to various natural laboratories ranging from State parks, science museums and Newfound Harbor Institute.

Handouts on materials used during this project will be available for those interested. Materials will include: pre and post tests; field survey sheets; curriculum worksheets; and, student and teacher training guides.

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Teaching Reading by Computer

Grover C. Mathewson, Florida International University

This presentation describes procedures, results, and recommendations from Florida International University's third annual summer workshop entitled "Teaching Reading by Computer." This workshop is based on the idea that teachers in grades 4-12 gain by having the ability to adapt prototype reading instruction programs for use in their schools. The prototype programs are written in the popular Microsoft BASIC. Changing the single command "CLS" to "HOME" makes the programs compatible with Applesoft BASIC.

During the first week of the course, teachers learn fundamental computer concepts and procedures. They learn initial computer commands of NEW, LIST, RUN, SAVE, CATALOG, LOAD, and HOME. A study guide leads them through the procedures of initializing their disks and entering a simple page-turning program on Apple II computers.

In the next six weeks of the course, teachers key prototype programs into their computers and save them on disk. The study guide contains prototype programs in the following areas: literal level comprehension, word recognition, vocabulary development, inference development, and reasoning in reading. The teachers adapt the prototype programs by adding their own reading content at appropriate grade levels. They have options to modify the programs by providing variable reinforcement, graphics, and other refinements.

As they progress from program to program, the study guide and lecture expand the teachers' knowledge of new commands and programming strategies. There is an attempt, however, to teach BASIC in a straightforward way and to present intuitively comprehensible prototype programs. It is considered very important to maintain favorable attitudes toward programming and using computers as teaching tools.

The success of the course has been high. The mean over ten scales for the most recent workshop was 4.54 (S.D. = .62) with 5.00 being the highest possible rating. Comparing evaluations on the same ten scales from the first offering of the workshop to the most recent, there are no significant differences except that recent students agree more that "There is sufficient information in the course to justify its becoming a permanent, graduate-level course," $F(1,37) = 4.19$, $p < .05$, and "The course covered reading skills which were relevant to my needs," $F(1,37) = 4.60$, $p < .05$.

Contact for further information:
Dr. Grover C. Mathewson
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Miami, Florida 33199

Computers and the Reluctant Learner

Kathleen Ryan, Collier County Schools

This presentation discusses the implementation of micro computers as the prime instructional tool in compensatory education classes at a rural Florida high school. The classes were for tenth graders targeted as potential failures of SSAT-II and those students who had already failed SSAT-II at least once.

The results demonstrated success in the cognitive domain as determined by passage of SSAT-II, and in the affective domain by more positive attitudes towards self and the subject matter. Time on task and attention span were increased, and acceptance of responsibility for learning was enhanced.

Currently most high schools have computers in labs for students to learn programming and data processing. Students, who have become reluctant learners by high school age, seldom see a computer. If they do, it is usually as a reward as a game playing vehicle. A major area yet to be explored in depth for the micro computer is as an instructional tool.

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Using FIRNCOM - Bulletin Boards, Electronic Mail, and More

Michelle French, Florida Department of Education
K. Fred Daniel, Florida Department of Education

This session is an overview of FIRNCOM, the electronic communication service of the Florida Information Resource Network (FIRN). FIRNCOM consists of the DOE Electronic Bulletin Board, electronic mail, and online files. It can be used by educators with microcomputers/terminals/word processors attached to telephone modems or with terminals attached to SUS regional data centers or other FIRN hosts. Local dialup access is available in eleven Florida cities.

The first component of FIRNCOM--the DOE Electronic Bulletin Board--makes public bulletins instantly available. The bulletins are posted at the Southeast Regional Data Center in Miami and are available to any person who signs on FIRNCOM.

With the second component--electronic mail--private messages can be sent to other individuals registered on the system. Messages can also be posted to the bulletin board (and thus be made available publicly). A message can also be sent to persons on a distribution list. Messages are available instantly; when a recipient signs on, a notice that a message is waiting appears.

The third component--online files--makes larger documents available. These documents such as regulations, directories, or catalogs which would normally be used for reference. Simple search commands allow the reader to go to the section of the document of interest, without have to page through the entire text. Searches are based on a keyword technique, with any word in the document serving as a keyword.

To use FIRNCOM, it is necessary to open an account at the Southeast Regional Data Center. There is no initiation charge or overhead charge for an account; users are billed only for actual usage. For persons who do not have an account, a public account is available which provides access to the DOE Electronic Bulletin Board (but not to electronic mail or online files).

For further information contact Michelle French, Room 1702C, Department of Education, Knott Building, Tallahassee, Florida 32301; telephone (904) 487-1630, Suncom 277-1630; mail code MICHELLE=FRENCH.

Techniques of Two and Three Dimensional Graphics

Dennis W. Dormady, Jacksonville University

This presentation shows the basics of two and three dimensional computer graphics. Discussion includes the fundamental mathematics behind the basics. Samples of code, in both BASIC and Pascal, demonstrating the fundamentals, are available to participants. Participants should be familiar with the cartesian coordinate system.

The presentation begins with a brief introduction to the fundamentals of two dimensional line and polygon/circle generating algorithms. Due to the variety of computer graphics commands available on different computers, the presentation is in "generic" terminology.

The presentation continues with a discussion of translation, scaling, rotation, and skewing and the mathematical basis behind each. As each topic is presented, the logical extensions from two to three dimensional coordinate systems are presented.

A brief discussion of alternate coordinate systems, clipping, and windowing conclude the presentation.

For further information, contact:
Professor Dennis W. Dormady
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Jacksonville, FL 3227[illegible]

Media Management

Deana Costner, Colonial High School
John Claytor, MLS Software Development, INC.

From stamp pads to laser pens...a complete IBM-PC Media Management program with the main components of Circulation, Inventory and Data Conversion. Within these components are supporting programs that involve inventory, statistical data, student records, card production, holds/reserves and an on line catalog in the writing stages.
Presentation includes a step by step outline of how to get a Media Center ready for computer management, a visual demonstration of the program and a glimpse of what is to come.

MSL Software Development, INC.
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SUS Regional Data Centers: What's In Them For You?

Vicki Turner, Coordinator
Training and Development, Northeast Regional Data Center
Marie Dence, Associate Director
Northeast Regional Data Center

Educators and data processing personnel occasionally need access to programs or large shared systems that are not available locally. Access to a wide variety of programs and large-capacity hardware is available to the Florida educational community through the SUS Computing Network built around five Regional Data Centers located in Tallahassee, Gainesville, Tampa and Miami. Each of these centers offers a large library of compilers and application programs including software that can be used for the development of applications in statistical analysis, program development, library research, interactive time-sharing, text-processing, electronic mail, and graphics. These centers also provide facilities for storing and/or sharing large amounts of data. Through the Florida Information Resource Network (FIRN), most educational institutions in Florida will have access to these centers through direct connection or through local centers tied to the network. Dial-up access is also available from terminals and/or microcomputers.

This session presents an overview of the types of programs and facilities available through the SUS Regional Data Centers, procedures for accessing these services, and sources for obtaining more information.

Contact for further information:
Vicki Turner, Systems Coordinator
Northeast Regional Data Center
Space Science Research Building, University of Florida
Gainesville, Florida 32611

An Exemplary Computer Management System for Instruction

E. Wayne Roberson, PhD
National Diffusion Network
United States Department of Education

This presentation will give an overview of an exemplary software program, the Computer Assisted Diagnostic Prescriptive Program in Reading and Mathematics (CADPP), which has been nationally validated. The program is currently funded by the United States Department of Education to provide training and materials to educational service providers nation-wide.

The CADPP is a data-based management system which allows a user to load: 1) learning characteristics of individual students, to include age, instructional level, and identified learning modality; and 2) skill oriented characteristics of avaiable instructional materials, to include readability level, interest level, and modality utilized, into a computerized filing/retrieval system. Once these files are loaded, the CADPP cross-references these files to match similiar student characteristics to material characteristics, and produces customized prescriptions (personalized edcational plans) for each participating student, based upon the reinforcement skills requesed by the instructor.

In addition to generating prescriptions, the CADPP tracks an individual child's yearly activities and can produce cumulative reports for: skills instructed and skills mastered, with date of mastery; and total listings of all instructional materials utilized durig the year, or a designated period of time.

To date, the CADPP user's group consists of over 1,000 schools in 38 states, to insure a continuous design for program refinement and improvement.

This session will be of particular interest to educators working with students in remedial programs, gifted/talented programs, compensatory education, migrant education, and community/junior colleges.

Contact for further information:
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Dillwyn, Virginia 23936

COMPUTERS CAN/MUST INCREASE SCHOOL PRODUCTIVITY

NELSON J. TOWLE, SARASOTA COUNTY SCHOOLS

The press has begun to criticize the use of computers in schools. The absence of replicated results in improved student achievement or reduced cost have led some television and newspaper reporters to conclude that computers in the classroom are an expensive fad.

This presentation examines applications of the computer that can increase productivity of students, teachers and administrators. The presenter also issues a challenge to educators to reduce trivial uses of the computer in schools. We must adopt a long range view of improving school productivity through producing measurable results directly attributable to use of the computer.

Educators recognize the need for nationwide reform in schooling which computers can promote. We also recognize that this reform is not immediately forthcoming. Combining research from the past few years in teaching effectiveness with our knowledge of computer applications will improve instructional environments in the classroom as use of the computer has increased productivity in industry and office buildings.

Some of the disappointments of instructional computing include:

Instruction in computer programming has not produced students with enhanced ability to learn math or social studies.

Computer literacy training for both teachers and students has not delivered to society knowledgeable users of computers.

Computer assisted instruction as practiced today has not given the teacher the 'new dimension' promised by software developers.

Computer managed instruction has been a solution without a clear problem and has increased the amount of work for teachers instead of decreasing the teacher load.

Some computer applications in the classroom have improved instructional environments and increased both teacher and student productivity. These are the uses of the classroom computer that we should be developing in our schools. These are the uses of the computer that this presentation will emphasize.

Comments are invited:

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Eliminating the Recopying Penalty of Composing with the Use of Word Processors

Margaret A. Moore

During the 1985-1986 school year, Hillsborough County is piloting a program which will include the additional use of word processors as an aide to the current Developmental Writing Program (DWP). This presentation provides methods, techniques, and procedures which have been developed for the acquisition of keyboarding skills and word processing skills for students and teachers in DWP.

The first part of the presentation demonstrates activities and materials for improving keyboarding skills. This will be achieved through a computer demonstration of the software used, KEYBOARD by Teacher Support Software, as well as overhead transparencies and slides of children working in the program.

The second part of the presentation provides methods, techniques, and procedures for teaching word processing skills. This will also be achieved through a computer demonstration of the software used, THE BANK STREET WRITER by Scholastic. Overhead transparencies, activities, and recommended materials to maintain the acquisition of these skills by students are described and illustrated through the use of slides of children working in the program and a display of the children's work. Finally, ideas and suggestions for expanding and developing materials currently used in the DWP are demonstrated.

The activities are structured to be interesting and related to the current curriculum so that students can acquire the skills of word processing with ease in confidence and confidence while engaged in meaningful and purposeful activities. Revision is an essential part of the composing process in DWP, bridging the gap between the stage of creation and each succeeding stage. However, revisions are frequently cumbersome, causing writers to be reluctant to edit and revise. As students use word processors, they might be motivated to write and revise more, for the recopying penalty has been eliminated. Most important, the quality of their compositions might be improved.

Contact for further information:
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A Course of Instruction in Educational Technologies: For Today and Tomorrow

Timothy J. Sullivan, University of Central Florida
Philip T. Sciortino, University of Central Florida

This presentation attempts to explain an Educational Technologies Course, its rationalization, function and procedures. Information sufficient for participants to utilize in discussing or developing similar courses in other settings is provided.

The faculty of the University of Central Florida, College of Education, has committed itself to providing a holistic approach to the education of teacher candidates relative to educational technologies. They designed a course, required of all education majors, and it has been in place for over a year. The course integrates many forms of instructional media, including computers, into a body of instruction and skill development.

The course attempts to show students how to select from and correctly utilize current technologies in an educational setting. It includes emphasis on CAI and CMI, data banks, modem useage and linkage. No computer programming is taught, though there is a special emphasis on software evaluation and wordprocessing.

Students are exposed to developing technologies in relation to classroom instruction and student learning. The course is designed to evolve with emerging educational technologies, as opposed to having to design new courses of instruction or components of instruction (within courses) specific to each new emerging technology.

Contact for further information either:
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Orlando, Florida 32792

Computer Awareness as a Language Experience

Cindy Greene, Apalachee Elementary, Tallahassee

The effective use of computers in the primary classroom begins with successful management of time, space and equipment. The presenter shares ideas in scheduling computer use through centers, reward systems, and peer tutors. Incentives for good student behavior are detailed which can minimize teacher time spent supervising student conduct at a computer center. Specific suggestions that have worked in the classroom are shown.

Primary children need to become familiar with the parts of the computer and safety rules involving their use, as well as develop the ability to interact with a computer program. Methods for involving children actively in thier own learning are explained. Examples of games that have been developed to give children practice with the keyboard and identification of computer parts are available for duplication. The presenter shares classroom tested puzzles, egg carton games, puppets, charts, and art projects that can be used to motivate children to master the necessary computer skills. Time is set aside for sharing common concerns, avoidable blunders and helpful hints that the participants have discovered on the way to successful integration of computers into the primary classroom.

A musical slide presentation serves as a summary of the topics that are covered. The pictures show children involved in activities that stimulate interest in, as well as expand knowledge of, the world of computers.

Contact for further information:
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Apalachee Elementary School
650 Trojan Trail, Tallahassee, FL 32301

/Nightmares in Interactive Video

Lee J. Mullally, University of Florida

Designing and producing an interactive video tape program is a complex process. One must consider the roles and responsibilities of the production team members, the equipment requirements, and the advantages and limitations of an interactive video tape program. This presentation consists of a case study that addresses each of these areas.

A production team was formulated and consisted of an instructional designer, a computer specialist, a video producer, and a subject matter expert. The instructional designer and subject matter expert analyzed the target audience and the task to be taught through this interactive video tape program. The team met to discuss the sequence of instruction required for a learner to perform the identified psychomotor skill. The team met to create the visualization and textual information required in the program. The instructional designer and computer specialist worked closely to develop formative evaluation measures. The video producer also worked closely with the subject matter expert and talent for the video production work. Although some of the work was performed by individual team members, much of the work was performed by the team.

The equipment/materials required to use this interactive video tape program consists of the following:

1. Apple //e with dual disk drives
2. Super Pilot and Program Disk
3. BCD Interface and Program Disk
4. Sony 5600 video tape recorder & color monitor
5. Laminated models

Other television studio equipment was required to produce the interactive video tape program.

Individuals need to work and interact with others when the programs are designed and produced. The separate types of media must be integrated as a system and these types of media tend to be expensive. This medium, like others, may or may not be appropriate for all intended learning outcomes. The complexities involved in producing interactive video tape programs can cause nightmares.

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Social Talk and the Microcomputer

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Sue Fones, Speech Pathologist, Pinellas County, Florida
Marge Gibbons, Instructional Technology Contact, FDLRS/Gulfcoast

Microcomputers are increasingly becoming a part of the therapeutic process for the Speech-Language Pathologist. One area of investigation for relevance of computer application is the use of the computer as a teaching tool for pragmatics, or functional language use. Social greetings and messages are pragmatics forms which are frequently used inappropriately by language delayed children at the elementary level. Since these aspects of communication are crucial, effective procedures for remediating these difficulties are of concern to teachers and clinicians working with this population.

Although pragmatic intervention techniques have been in use for some time, little is published regarding the teaching of language through the microcomputer. Using the program "Social Messages," the author created a variety of greetings and farewells , and divided them into two types of vignettes. Reading level is at the second grade, and the children are presented with the various forms in short paragraphs, followed by multiple choice questions.

Two groups of third, fourth and fifth grade students were first administered a pre-test to assess pragmatic competence and performance. Both groups were composed of males and females. While Group A was taught using traditional therapeutic practices, Group B was trained using the tutorial application of the pragmatics program as well.

Post-tests were administered to both groups to assess performance after therapy using both approaches. Results at this time indicate that students presented with both computer training and student-teacher interaction have gained remarkably in their use of the aspects of language development relating to social messages and greetings. It is also felt that with the correct selection of software integrated into a well-planned therapeutic program, the use of the microcomputer with language delayed children can prove a beneficial and useful tool.

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Clearwater, Florida 33516

THE CAI CONNECTION

Peggy McDowell, Broward County Schools
Mary Barrett, Broward County Schools
Nancy Tonniges, Broward County Schools

This presentation discusses the concept of CAI in a Local Area Network (LAN) environment. The presenters will show how the utilization of a LAN transforms ordinary CAI into CMI, where students' progress is graded and tracked and incorporated as an integral part of the curriculum.

The project under discussion is a federally funded pilot project at Sunrise Middle School in Ft. Lauderdale. The school's software is housed on a 45 mg Corvus hard disk drive and networked to fifteen Apple IIe microcomputers. Students work on English, Math, or Reading skills as specified by their teacher. Each computer station is independent of the others. Floppy disks are never used in this CAI lab. Sessions are one hour in length and between 250 and 300 students receive prescriptive CAI each week.

Discussion includes, but is not limited to, lab preparation and organization, cost factors, creative uses of networking, and future possibilities using this technology.

Contact for further information:
Peggy McDowell
Sunrise Middle School
1759 NE 14 St. Ft. Lauderdale, FL 33304

A Data Processing "Practice Set"

Lister W. Horn, Pensacola Junior College

This presentation describes alternative approaches to teaching Introduction to Computers/Data Processing including theory only, and theory supplemented by programming, task oriented software, or a practice set, each of which has advantages and disadvantages. A practice set is desirable when there is limited time, scarce computing resources, or students of low ability.

The practice set approach is illustrated using the software package Micro Payroll System (MPS) by Lister W. Horn published by Charles E. Merrill Publishing Co. This package is an integrated application package involving elements of data entry and validation, data base, reports, spreadsheets, graphics and word processing with mail/merge. MPS is documented by a student guide and instructor's manual. It is open ended allowing students to enter data of their own choosing. The software has been used as a supplement to the presenter's freshman level Introduction to Computers classes.

The package is appropriate for high school and college level data processing and accounting courses and for computer literacy courses for high school, college, and adult learners.

Contact for further information:
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COMPUTER IMAGING AND KIDS...A COMPUTER GRAPHICS CAREER AWARENESS PROGRAM FOR ELEMENTARY STUDENTS

Martin Anderson-Crystal Lake, Illinois, Public Schools
Charles Lapp-Crystal Lake, Illinois, Public Schools

This presentation provides an overview of a three-year exploration of approaches to introducing computer imaging to elementary and junior high students. During this period of time, several different approaches were employed and units of instruction tailor-made to different target groups of students selected for pilot studies. Depending upon the nature of the group and the intent of the specific pilot study, the units involved student interaction with classroom teachers, learning center directors, and non-public school agencies which utilize computer imaging in their day to day production of goods or provision of services. Financial assistance was provided through Illinois State Board of Education Career Education grants. Technical and inservice support was provided by the School of the Chicago Art Institute's BASIC program.

The presentation will incorporate a comprehensive slide overview of student computer imaging experiences in school as well as in the business and professional community. In addition, sample instructional units will be available for distribution to those in attendance.

This project continues to be an ongoing one and while firm decisions have yet to be made in terms of appropriate placement in the curriculum, the presenters will share what they perceive to be the successes and pitfalls they encountered to date and what role computer imaging might play in an elementary school district's curriculum in the future.

Contact for further information:
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Commissioner's Task Force on Instructional Computing

Wilbur P. Dershimer, Jr., Seminole Community College
Marilyn Neff, Dade County Schools

The Commissioner's Task Force on Instructional Computing was established to determine how the Florida Information Resource Network (FIRN) can contribute most significantly to instruction. Our fifteen members represent all levels of public education and a wide variety of educational assignments. Five are classroom teachers. This session will discuss the recommendations of the Task Force. Comments will be invited.

Task Force Members:

Ireland Brock, Principal, Escambia High School, Pensacola
George Dawson, Associate Professor (Science Education), College of Education, Florida State University
Donald A. Dellow, Dean of Instructional Affairs, Chipola Junior College, Marianna
Wil Dershimer, Chairman, Information Processing Department, Seminole Community College, Sanford
Marita Eng, Teacher (Mathematics), Sandalwood High School, Jacksonville
Mike Leclerc, Teacher (Instrumental Music), Merritt Island High School, Merritt Island
Marilyn Neff, Director, Computer Education and Technology, Dade County Schools
Carrie Robinson, Principal, Bayshore Elementary School, North Ft. Meyers
Richard Saporita, Teacher (Spanish), John I. Leonard High School, Lake Worth
James E. Surrant, Superintendent of Schools, Volusia County
Carol Todd, Teacher, Woodlawn Elementary School, Sebring
Andria Troutman, Director, Florida Center for Instructional Computing, University of South Florida
Jeaninne N. Webb, Director, Office of Instructional Resources, University of Florida
Beverly Williams, Teacher (Business Education), Hollywood Hills High School, Hollywood
James Yopp, Director of Elementary Education, Columbia County Schools

Contact for further information:
Department of Education
State of Florida
Tallahassee, Florida

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Aliens Ate My Dog: Using Logo to Stimulate Creative Writing

Bud Wellington
Deptarment of Special Education
University of South Florida
Tampa, Florida 33620

Dr. Fran Stryker, a former professor of creative writing at the University of Buffalo, and best known as the author of "The Lone Ranger" developed a technique of quickly generating and developing large numbers of plot lines. Although Stryker's "morphological" model is easily adapted to a simple story generation program, the Logo philosophy urges a wider view. This session explores several benefits of a process orientation in three areas: 1) planning the program, 2) writing the program, and 3) using the program.

Planning the program starts the problem solving process: Just what IS the problem, anyway? Could this be a good time to talk about heuristics? Is this a group project? Would a competitive mode be more fruitful than a cooperative mode? What will the inputs look like? What do we want the program to do? And, from a language arts perspective: What are the elements of a story? How do we use parts of speech?

Writing the program continues the process: Are there ways in which this program is similar to others we have done? Do we already have one or two procedures that we could use again? What known algorithms fit? What new algorithms will we discover? And, in a more aesthetic vein: What are some elements of "friendly" software design? How should we format the output?

Using the program in language arts opens the door to products and more processes: What products can we make from the program output? Would some of these events make a good play? Could we tape our own soap? Audio or video? Could we produce a parody of the Star? How about a book of short poems and stories? And, affective issues for group discussion and private reflection: What kind of goals do you set for yourself? What obstacles stand in your way? How can you move toward resolution? What problem solving strategies do you know?

Bud Wellington
Deptarment of Special Education
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Tampa, Florida 33620

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Programming BASIC - with a GRAPHICS approach.

M. Sue Galloway, Perry Middle
Cheryl Goldstein, Driftwood Middle
Denise Baumbart, Nova Middle
Mary Barrett, New River Middle
Peggy McDowell, Sunrise Middle
Tanya Martin, Apollo Middle

This presentation discusses a self-contained course in teaching BASIC programming with a GRAPHICS approach. This course was developed by six Broward County middle school teachers during the summer of 1985.

This "Hands-on-the-computer" course presents BASIC programming commands and techniques needed to create graphics displays and animation in print, low-resolution and high-resolution graphics.

The authors will present:

1. design of the five units
2. design of the chapters as packets, and how these can be utilized in the classroom
3. material included in the Appendix

The course was printed by Broward County and distributed to all middle schools in late August, 1985.

contact for further information
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Fort Lauderdale, Fl. 33324

Administrative Software for Microcomputers: What's Available and Where Are We Headed?

Philip E. Mackey, Director
Management Information Department
New Jersey School Boards Association

This presentation is based on the information collected in the 1984-85 edition of Micros for Managers: A Software Guide for School Administrators, an annual publication of the New Jersey School Boards Association, and on data collected for the recently-published 1985-86 Supplement to the book.

Information in Micros for Managers is gathered by surveying all known vendors of microcomputer software for school administration. The book and Supplement provide data on almost 400 programs for accounting, attendance, counseling, grading, inventory, library management, scheduling, student records and such miscellaneous tasks as energy conservation, transportation routing and even football scouting. Data reported includes information on what the software does, who sells it, what it requires to run, how fast it is, whether user modification of software is possible, where it has been evaluated and what school districts are currently using it.

The presenter summarizes this information and discusses trends in the administrative software market: costs, what microcomputers are favored by software developers and the rise of integrated packages capable of handling all of a school's or district's programming needs.

The presenter stresses that the purchase of function-specific software is only one of the routes an administrator may choose to automate school or district operations. Two alternatives are in-house development of function-specific software (not recommended) and the use of generic software -- data base, spreadsheet and word-processing packages (highly recommended).

The presenter explains how administrators can screen the software described in Micros for Managers to determine which packages are most suited to their purposes. Attendees are encouraged to volunteer information about their own experience with such programs and about their own techniques for evaluating software.

No previous experience with microcomputers is necessary for this presentation.

Dr. Philip E. Mackey
New Jersey School Boards Association
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Trenton, New Jersey 08605

Project 50/50: A computer technology curriculum for secondary school students

Dr. Deborah J. Miles, Coordinator
Project 50/50

Project 50/50 is a computer technology program designed to assist secondary school students in gaining computer application skills while increasing their levels of social functioning and academic achievement. The project was developed and implemented as an education/industry partnership and has as its target population, ethnic minorities, females and disadvantaged youth.

The uniqueness of the program is found in its comprehensive approach. The curriculum focuses on computer applications and consists of four components:

- o Computer as a Subject covers current and future computer applications, history, terminology, and robotics.
- o Computer as a Tool introduces programming in LOGO and BASIC languages and the use of graphics and word processing software.
- o Computer as a Career focuses on tech-based careers and job opportunities, job search techniques, interviewing skills and inter-personal relations.
- o Computer as a Metaphor includes exercises in orienteering and uses map and compass skills in relation to programming a computer.

When a school adopts Project 50/50, a network with local businesses is either begun or enhanced; teachers are trained; collaboration between schools is encouraged; and a curriculum is established.

In contrast to comparison groups, Project 50/50 students have demonstrated significantly greater acquistion of computer skills (as measured by the Computer Skills Test), self-esteem (as measured by the Tennessee Self-Concept Scale), and interest in math, science and technology (as evidenced by student schedules), based on a one-year intervention period. Following a four-year plateau of achievement scores for math, reading and language, Project 50/50 students demonstrated significant gains compared to a norm group.

Contact: Dr. Deborah J. Miles, NDN Coordinator (617) 987-1626
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A Computer Lab in a Media Center! Are you crazy?

Marion Cannon, Winter Park High School

This presentation explains how to establish and administer an interdisciplinary instructional Computer Lab in a high school Media Center. We will begin with the reasons why a school would want to undertake such a project and go into the ways to acquire funding for equipment and software. The emphasis will be on finding grants and local sources of funding to support the effort.

We will cover writing goals for the lab's incoporation into the school curriculum and establishing policies for its use by students and faculty. Examples of goals and policies will be shared. We will also discuss the time, space and money commitment on the part of the Media Staff and its impact on the total media program.

In-service training of teachers in lab procedures plays a large part in the success or failure of this project, and methods of acomplishing this goal will be shared.

Finally, sources for software will be explored, and other uses for the lab as a source of information retrieval, i.e. hookups to university libraries and data bases, will be discussed.

This will be a practical session for Media Specialists or teachers who are in various stages of establishing a computer lab in a secondary school.

Contact for further information:
Ms. Marion Cannon
Winter Park High School
2100 Summerfield Road
Winter Park, Florida 32792

Project CUE (Computer Utilization in Education)

Christine M. Gilbert, Central Square Central Schools

This presentation describes Project CUE, a reading/language arts and mathematics program for grades 3-8 that uses the microcomputer to reinforce basic skills. The presentation explains how CUE, a sequentially organized, criterion referenced reading and mathematics curriculum incorporates both state and local curriculum objectives. Criterion referenced objectives are correlated with the skills continuum of commercially developed, computer assisted, instructional programs and other commercial materials. The CUE curriculum includes assessment techniques which may be utilized for the purpose of student diagnosis, placement, and instructional management.

The program is designed for a laboratory setting or as an "in-class" program. Students are scheduled for five, 30-minute sessions per week of remedial instruction. Time on the computer will vary depending upon student remedial area(s) and instructional needs. A student is scheduled to use the microcomputer daily for approximately 15 minutes per session, 75 minutes weekly. Remaining instructional time provides the student with reinforcement activities or with alternate related instructional materials. One micro-computer can service 24 target students based on a six-hour day.

Program effectiveness, evaluation procedures, implementation requirements and installation costs are addressed.

For further information contact:
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Project CUE
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Central Square. NY 13036 (315-668-2611)

The Design of a Computer Table for the Physically Handicapped

Lawrence Jeffrey Fitterman, Florida Center for Instructional Computing

This presentation discusses the design of a computer table for the physically handicapped. A preliminary review of the literature featuring furniture for the physically handicapped does not reveal a computer table specifically designed for the defined target population.

The presentation first addresses furniture currently available for the physically handicapped and then addresses the ergonomic research concerning the design of a computer table for the target population. Next, the presentation addresses the types of wheel chairs and the physical characteristics of each chair. A pilot study conducted during a summer school computer literacy class for the physically handicapped to study the physical access problems encountered by the students and teachers is also discussed. Lastly, the presentation discusses the four steps involved in the design procedure:

1) the development of a rough design drawing based upon the pilot study and ergonomics;
2) testing of the table's strength and stability through the use of a structural design program and an IBM PC/AT to simulate physical work loads;
3) re-evaluation of the design to reflect the synthesis of the program's test findings; and
4) the development of shop drawings including a list of materials, tools needed for production, production time projection, and the estimated cost of production.

A demonstration of a prototype of the actual computer table concludes the presentation.

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College of Education, University of South Florida
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TITLE I MATHEMATICS COMPUTER ASSISTED INSTRUCTION (CAI)

Mr. Marion J. Cortez, Supervisor
Lafayette Parish School Board
Lafayette, Louisiana

A Chapter I Program for students in grades 3-8 is a unique time-on-task activity which provides concentrated practice on a computer (only ten minutes per day), immediate feedback, movement of the student to his appropriate level, and a management system for teachers.

The program was devised by Computer Curriculum Corporation of Palo Alto, California.

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Lafayette, Louisiana 70502

A Functioning Elementary Computer Lab - It Works

Donna Bachman, Assistant Principal
Tricia Cox, Media Specialist
Jim Smith, Coordinator, MIS/Planning

This is a pragmatic down to earth presentation describing the operation of the Fred Wild Elementary School Computer Laboratory. Fred Wild is located in Highlands County. The focus of the presentation will be on:

1. **Philosophy** - description of how the lab fits into the total school approach to helping children learn.

2. **History** - description of how the lab reached it present status.

3. **Diagnosis, Prescription and Software** - presentation on the processes of determining what the students do while in the lab.

4. **Hardware and Management** - discussion of room and staff organization and the scheduling of the lab.

5. **Evaluation** - presentation on how it is determined if the vehicle of the laboratory is accomplishing that which it is intended.

Fred Wild Elementary School has an enrollment of 750 students K though 4th grade with a staff of 28 teachers, 15 aides, a media specialist, a guidance counselor, an assistant principal and Mr. Watson, the principal.

Contact for additional information:
Mrs. Donna Bachman, Assistant Principal
Fred Wild Elementary School
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Sebring, Florida 33870

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Implementing Equal Access Computer Labs

Janeen S. Clinton, FDLRS/Alpha
Margaret Terry, Department of Instructional Computing Services
Walter Cornell, Department of Instructional Computing Services

This presentation discusses the philosophy followed in Palm Beach County to adapt computer literacy curriculum, hardware and software to meet the needs of all children. Computer labs are being placed in every school and ESE Center in Palm Beach County as part of a District wide effort to make computer literacy a part of the Unified Curriculum. To provide access to microcomputer technology by all students, it is realized that adaptive hardware is required for some exceptional populations.

This presentation summarizes the planning strategies and coordinated efforts that have been in effect to date in Palm Beach County to provide computer literacy for all students. The Department of Instructional Computing Services, Reid Harvey, Director, and the Department of Exceptional Student Education, Sherle Stevenson, Director, are cooperating in funding and evaluating adaptive hardware to determine which devices are "essential" to provide equal access for all students. The financial impact of purchasing and maintaining the equipment is also under consideration as is the need to train District Computer Specialists and ESE personnel in the appropriate use of adaptive computer devices.

The concept for cooperative planning between Departments was conceived during the APPLIED TEHCNOLOGY FOR PHYSICALLY/VISUALLY IMPAIRED STUDENTS SUMMER INSTITUTE sponsored by BEES and SARRC.

This presentation will include a handout that:

- -summarizes Palm Beach County's position on computer literacy for all students
- -summarizes the need to adapt the Palm Beach County Unified Curriculum for Computer Literacy for the different exceptionalities
- -provide guidelines for establishing a criteria and systematic observation of students who may require adaptive devices
- -list of suggested hardware to place in an ESE Center computer lab
- -chart comparing the financial impact of establishing a computer lab in a regular school and an ESE Center
- -partial list of suggested software to teach computer literacy to ESE students

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Margaret Terry
Walter Cornell
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SMALL SCHOOL ADMINISTRATORS AND THE MICRO

James M. Cain, Decatur City Schools, Georgia

This presentation demonstrates several uses of the microcomputer in the small school setting. Large schools have had computerized attendance, grades, and purchase ordering for years, but the small school often does not have the use of mainframe computers nor the knowledge needed to utilize existing programs that can save hours of clerical time. With the advent of integrated programs such as Appleworks and Lotus 1-2-3, the microcompputer becomes a viable alternate to extra clerical help. The presenter has been using Apples for six years to do these tasks in the Decatur City School system and feels that we have saved nearly one-half of the salary of a secretary per year in the High School alone. Word Processing alone saves an hour per day.

Examples will be demonstrated showing how attendance lists, discipline records, student addresses and phone numbers, supply orders, lunch menus, and other activities may be kept on the microcomputer using comercial database, word processor, or spreadsheet programs.

The presenter will be using an Appple IIe computer and the Appleworks program, but the applications can be done on any microcomputer with similar programs.

James M. Cain, Computer Coordinator, City of Decatur Schools
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Application Software as an instructional tool in the science classroom

Frank D. Breit , Department of Instructional Computing
College of Education
University of South Florida

Microcomputers can be used in a variety of ways in a science classroom. Some teachers use the microcomputer with application software as a management tool to assist in inventory and grading procedures. Other teachers have begun investigating the use of application software in instruction. This presentation examines the use of certain application software, namely data management and spread sheet programs as instructional tools in the science classroom.

Data management programs facilitate the organization and utilization of information. Through the process of creating a data management file students gain a better understanding of the structure of a body of knowledge; whether it be rocks and minerals, plant varieties, or chemical elements. Once a data file is created, relationships between elements of the information can be investigated using the sorting and searching techniques available with data management programs. Sample lessons are presented in which students gain experience in designing as well as using science data files.

Electonic spreadsheet programs allow for numerical information to be displayed and relationships between variables to be explored. Students can gain a greater understanding of science concepts through the use of spreadsheet templates created by their teacher as well through the development of their own templates to solve specific problems. Electronic spreadsheets are also useful as a tool in the analysis of laboratory data. Examples of the use of spreadsheets in a wide variety of science content areas are presented.
Sample lessons are displayed in which students gain experience in designing as well as using templates created with the application software.

Although the concepts discussed are applicable on a wide range of software packages the examples focus on the use of PFS-File and Multiplan. These are used because of their ease of use and their wide availability.

Contact for further information:
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Teacher Tested Data Bases in the One-Computer Classroom

Cindy Daly, Pinehurst Middle School, Pinehurst, NC
Andy Booth, Moore County Schools, NC

Data bases are both information gathering tools and tools for extending students' thinking. This presentation discusses how a teacher in a middle grade classroom with one part-time computer created data bases in science and social science to be used in conjunction with standard classroom texts. These data bases were used not only as sources of information but also as a means to help students recognize patterns, formulate and test hypotheses, and analyze data in new combinations.

1. In conjunction with a social studies unit on the state, students gathered and input information about the counties and regions. This data was then usedto investigate such questions as what characteristics make certain regions identifiable, what connections can be found between agricultural and industrial areas and population and wealth, what characteristics identified an area of greater tourist attraction, etc.

2. A very simple data base on animals and what type of foods they eat was created indicating only the name of the animal and then names of some of the foods -- plant, insect, and animal. With this simple data base, the students were able to establish many concepts concerning the food chain and see, in addition, that the individual chains combine to form a complex web.

3. A third data base concerned common foods. Each food was listed with its food group, serving size, the calories per serving, vitamins and minerals, protein and carbohydrates in a serving, etc. With this data base the students were able to investigate characteristics within food groups and make conclusions about the various foods and how they are related.

Along with the discussion of different data bases, the presentation offers tips on how to manage computer time with only one unit in the classroom and how to make presentations so that the presence of one unit will not have a negative impact on classroom management.

For Further Information Contact:
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Carthage, NC 28327

Equity in the Computer Classroom: Definition of The Problem and Strategies for Solution

Janet Bard Hanson, University of South Florida

As computers become a part of mainstream curriculum, the disparities in computer access and usage are increasingly apparent. A close examination of these inequalities reveal interesting patterns related to sex, race, economic background, handicapping conditions, and age. This presentation addresses the factors involved in computer usage and the educator's responsibility in promoting equity.

The problem is defined by presenting research regarding inequalities on a national and local level. A survey of population characteristics of student enrollment in the elective eighth grade computer classes of Pinellas County is contrasted with other research on different age levels.

Strategies are presented which address the issue on all levels; state, district, school and classroom. School-based procedures to encourage all students and groups to make greater voluntary use of computers are outlined. Specific emphasis is given to the key position of the classroom teacher. The opportunities to serve as a role model and organizer enable him/her to monitor patterns of usage and help overcome subtle barriers to equal access and use. The presenter discusses intervention strategies to promote greater opportunity for all students and reverse the computer avoidance tendency of many students.

Contact for further information:
Janet Bard Hanson
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University of South Florida
Tampa, Florida 33620

What To Do When The Micro Fails

John K. Corwin, Ph.D., Miami-Dade Community College-North
Janice R. Sandiford, Ph.D., Florida International University

This presentation discusses and elaborates upon the various methods that the non -technical micro computer user/operator can go through to determine various hardware/software faults. Critical to the determination is logical trouble shooting from the simple - is the computer properly cabled to electricity? to the less obvious serious faults.

Methods of diagnosing common software faults are discussed and demonstrated. The proper care of software as well as the use of software to accomplish diagnosis is demonstrated. The presenters discuss system configuration, data storage capacity, memory capacity, system configuration and correct system version and how each affect software.

Also discussed and demonstrated will be hardware faults. These include power supply, keyboard faults, drive speed, switching cables, checking cables and write protection.

The presenters will demonstrate the proper way to remove and insert cards, remove and insert memory expansion chips and adjust drive speed while discussing the proper procedure for accomplishing these simple activities.

Participants will be provided with a list of available resources for local and factory services as well as advanced training.

Contact for further information:
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NETWORKING -- FROM A DEPARTMENT TO A COUNTY

Mr. Bruce Raskin
Dade County Public Schools

This presentation will describe the evolution of telecommunication in the Dade County School System through the establishment of a countywide multiline Bulletin Board System, an administrative IBM PC Network, and an instructional network for three inner-city schools powered by a mini-computer.

A large screen computer projector will be used to allow attendees to see how the students and teachers of Dade County experience the world of electronic communications.

1. The DCPS Board has been established to allow students and teachers to experience electronic communications first hand. The board, now in its second year of operation, provides software downloads, program reviews, and electronic mail, as well as the electronic edition of Computer News, our monthly newsletter.

2. The IBM network links five computers on two different floors of our main administration building. This system allows free transfer of information, as each machine can access the peripherals of any other machine including the hard drives.

3. A mini-computer was installed at Liberty City Elementary School in September of 1985. This system has been expanded this year via phone line and terminals to include two additional inner-city schools. Its primary purpose is to provide instructional activities in our inner-city gifted program. Plans are under way for the production of an elementary school newspaper via modem, and to use a mini-computer in a pilot program to provide AP (Advanced Placement) Pascal instruction to students in schools whose enrollment does not allow for regular classes.

Contact for information:
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Computer Education and Technology Department
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"0 to 1600", Accelerating a school into computer literacy

Jane C. Terwillegar, Palm Beach County Schools
Robert Bray, Palm Beach County Schools

This presentation describes how to organize a school-wide computer literacy program for students, teachers, and staff. Through the use of slides, the presenters demonstrate how it is possible to implement a full-scale computer literacy program in a large school of 1600 students with 158 faculty and staff members. As a new school, the computer lab came fully equipped, although there was no official plan for utilization. This literacy program grew from the desire of staff members to "get started". Using a small computer lab setting, Staff Development time, and faculty peer instructors, this in-house program set these objectives: to bring faculty and staff to a literacy level where they are able to supervise computers in the classroom, evaluate and select courseware for student use, and plan instructional units for students utilizing computer assisted instruction; and to bring students to a literacy and operational level so that teachers need not be concerned with teaching literacy skills. As a reward for participating in the program, teachers and staff receive Staff Development credit and students receive a license.

Examples are given of techniques that prove useful in working with computer-shy adults and over-eager students. Hints on how to set up a new computer lab are suggested. The "keyboarding" issue as a basic requirement for student instruction is discussed. Experiences of the presenters, the peer teachers involved in this program, are related to emphasize that even through trial and error, such school-wide computer literacy instruction can be started today, in any school, without waiting for the "perfect plan"!

Contact for further information:
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Royal Palm Beach, FL 33411

TEACHING CONCEPTUAL VOCABULARY - A FREE BUT POTENT PROGRAM

Gloria Kuchinskas, Boca Raton FL
G. Michael Kuhn, Florida Department of Education

The microcomputer program, HIGH FREQUENCY CONCEPTUAL VOCABULARY, was developed for Florida public schools and is distributed free to them by the Instructional Programming Section of the Florida Department of Education. The purpose of the program is to assist teachers in developing student vocabularies in an instructionally sound manner.

The English language requires students to learn over 88,000 distinct words in school. For each distinct word learned, there are one to three additional related words to be mastered. This represents a tremendous vocabulary load for teachers. This presentation will share some of the extensive research which indicates that presenting vocabularies in semantically related clusters improves vocabulary knowledge and reading comprehension while assisting students to acquire some of this necessary vocabulary.

The words selected for this program were taken from the EDL Core Vocabulary in Reading (EDL/McGraw Hill, 1979) because this list represents a nationally accepted, graded list, based on words found in widely used basal programs and frequency lists. HIGH FREQUENCY CONCEPTUAL VOCABULARY helps teach 100 of these high frequency words for each grade, from grades 2 to 8, a total of 700 words. In addition, an authoring program has been provided which allows teachers from other grades to insert their own vocabulary or the vocabulary of content areas, such as science, mathematics or social studies.

The program presents each group of 10 words embedded in a story to help students see the relationships in meaning among each group. The student is provided with four learning experiences with each word and its definition. A game provides motivational drill on the words and their meanings. In this presentation, slides of computer screens will be used to illustrate the semantic approaches used in the program. Additional assistance will be provided to use the program with SSAT vocabulary and basal readers.

Contact for further information: Dr. Gloria Kuchinskas
950 Ponce de Leon Rd., Boca Raton FL 33432

Teaching Online Bibliographic Searching

Jane P. Klasing, Broward County Schools
Susan Baumgardner, Coral Springs High School, Broward County

This presentation reviews the objectives, planning, and implementation of an online bibliographic search component included in the curriculum of the Broward County Schools Summer Institute for Mathematics, Science and Computer Education. This component provides Broward students and teachers beginning level competencies in the retrieval of bibliographic information to meet the academic requirements of science research assignments.

Students preparing science research assignments in the summer institute were given instruction in online searching by a high school library media specialist. They were instructed in search strategies including key word strategy, branching, broadening and narrowing topics, and thinking in synonymous terms. Instruction in online searching techniques included the application of:

1) System searching procedures and commands
2) Logical operators and combining logical operators
3) Special searching procedures such as truncation, root, paragraph qualifications
4) Limiting searches with common limitable paragraphs
5) Printing on and off line

Data bases searched by students and teachers included ABSTRAX 400, AGRICOLA, APPLIED SCIENCE AND TECHNOLOGY INDEX, BIOLOGICAL AND AGRICULTURE INDEX, BIOSIS, ERIC, GENERAL SCIENCE INDEX, and READERS' GUIDE TO PERIODICAL INDEX. The bibliographic citations were used to pull documents from area university libraries for the preparation of writing assignments.

Contact for further information:
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School Board of Broward County
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Shape Table Graphics for the Apple Computer

Walter Wager
Florida State University

Graphics and animation are generally desirable features in CAI lessons. However, for many APPLE BASIC programmers these features seem difficult to program and the mechanism by which they work is unclear.

This presentation discusses what shape tables are and how they are created on the APPLE II series microcomputer. A shape table is compared to a program and an explanation and demonstration of how the APPLE computer addresses shape tables and displays them on the screen is given.

A utility program, developed by the presenter, for creating shape tables is demonstrated, along with an explanation of how shape tables can be used in programs. Special shape table commands, (BLOAD, DRAW, SCALE, COLOR, ROTATE and XDRAW) are fully explained. Typical BASIC routines for displaying and animating a shape are also discussed. The session assumes an intermediate understanding of APPLESOFT BASIC.

Disks containing the program, and documentation for using it will be available at cost ($2.00) to those attending the session.

Contact for further information:
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Florida State University
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Elementary Math Problem Solving and the Micro-Computer

Jack A. Coffland, University of Miami

The presenter has one major objective: namely, to discuss a curriculum for teaching mathematical problem solving skills to elementary and junior high school students. Problem solving can be taught most effectively by identifying what should be taught and by developing lessons to teach that material.

To accomplish this objective, four main areas of content are presented. They include:

A. PROBLEM TYPES to be covered in the elementary/junior high math curriculum. Five (5) different types of problems should be presented to students. Problems should generally be ordered by difficulty to help students develop confidence in problem solving.

B. PROBLEM SOLVING HINTS which can be taught. Students need a repertoire of skills to use in attacking a problem not immediately understood. A series of twelve (12) problem solving hints are given and discussed.

C. PROBLEM DIFFICULTY FACTORS which can be identified and taught. All problems are not created equal; students must recognize and be able to deal with ten (10) variables which may be used to make a problem more difficult.

D. LESSON TYPES which should be taught to develop independent problem solving skills. Ten (10) lesson types are given to help teach students how to "figure out" a problem.

Throughout the presentation various computer software programs are identified which help teach problem solving skills. Screen print-outs are shown to identify software features most conducive to teaching problem solving. Finally, screen print-out sequences are used to show how problem solving skills can be taught most effectively with the computer.

Contact for further information:

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Challenges That Accompany The Implementation of Administrative Microcomputing

Donald A. Dellow, Chipola Junior College
Dale O'Daniel, Chipola Junior College
Carlotta Appleman, Chipola Junior College

This presentation will describe what the authors believe are some challenging problems that administrators will face when they extend the use of microcomputers in their organizations. On their own campus, the authors have identified many new problems/issues that they have encountered as a result of the apparent "successful" implementation of the new technology.

A few of the issues explored are:

-What is the role of the administrator with regards to the new microcomputer technology? Can institutions afford high-priced administrators acting as data entry operators? How do the ideas of Waters and Peters (management by wandering around) fit with the image of the "microcomputing administrator?" What kinds of new relationships will emerge between bosses and their staff?

-What level of knowledge and problem-solving ability is needed to utilize complex software packages? Is it time to start talking about "management information" skills instead of "computer inservice?" How many databases can an institution maintain in an efficient manner?

-What new kinds of relationships need to be developed between information management departments and microcomputer enthusiasts? How do we begin to examine cost-effectiveness and ownership of computing resources?

The presentation will explore the issues and suggest tentative answers to some of the questions raised. The presenters represent a unified management team of mainframe and microcomputing enthusiasts who feel that progress on many of the issues identified can come only with a cooperative posture of both groups.

Dr. Donald A. Dellow, Dean of Instructional and Student Affairs
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First Level Mathematics (KINDERMATH II)

Mary A. Felleisen, Project Director
First Level Mathematics (KINDERMATH II)
PRIMAK Educational Foundation

This presentation includes the demonstration of a 13-disk software system that is appropriate for children in their first year of mathematics instruction. The software is based on nationally validated printed materials for kindergarten and first grade that provide a sequential curriculum and management system for teaching basic mathematics skills.

The software is diagnostic/prescriptive in nature, with the child's entry level skills being determined by an assessment disk. From there the learner begins to proceed through as many as 90 step-by-step closely sequenced objectives that teach the broader areas of same/different, patterns, sets 0-10, shapes, matching numerals to sets, math signs, addition and subtraction. Each of the objectives is presented in the form of a lesson, with an introduction, teaching activities and an assessment before the student may automatically move to the next step. The lessons branch, re-teach or review the previous activity based on the child's progress within each succeeding lesson. A built-in management system provides for complete record keeping whether in a classroom or lab setting. Childrens' dates of participation, lessons learned, specific problem areas are all recorded and stored on the teaching disks. They may also be printed out or stored on a data disk for future reporting to parents.

Developed by a team of educators and programmers, the software system uses a joystick instead of a keyboard. Children are given instructions by means of a voice-synthesizer. The colorful graphics introduce mathematics concepts without requiring any reading skills, thus making it especially appropriate for not only kindergarten and first grade children but in programs of remedial and compensatory education. The interactive, multi-sensory approach of voice, high-resolution graphics and joystick response is particularly useful for students with special needs in such areas as fine motor-coordination, visual or auditory acuity. The material is child-centered with built-in praise and success.

The printed version of the materials and the accompanying manipulatives exactly parallel the lessons on the disks, and have been shown to provide educationally significant growth in young children, relative to national norms on a standardized mathematics instrument.

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A Consortium on Technology for the Handicapped

Eileen Pracek, Project Coordinator, FDLRS/TECH
James Randall, Project Coordinator, ACCESS Project
Robert Reid, Project Director, SECTOR Project
Chauncy N. Rucker, Project Director, ConnSENSE Project

This presentation describes the activities of a consortium of state funded projects concerned with technology for the handicapped. The projects are from Connecticut (ConnSENSE-Connecticut Special Education Network for Software Evaluation), Florida (FDLRS/TECH-The Technology Division of the Florida Diagnostic and Learning Resources System), Kansas (MICC-The Microcomputer Information Coordination Center), Michigan (ACCESS-Addressing Computer Concerns of Educators of Special Students), and Utah (SECTOR-Special Education Computer Technology Online Resource). The overall goal of the consortium is to increase the effectiveness of each of the individual projects; hence the improvement of information available nationally to special education administrators and teachers in the field of technology and the handicapped. To this end the projects share a great deal of information. The give-and-take of resources between projects eliminates the duplication of purchases and reviews, and time and effort is put toward greater advances in the field. For example, the projects share their software inventories so that evaluations can be coordinated. In this way the projects are able to significantly increase the total number of coursware reviews being done by the consortium.

Consortium products include reviews of special education courseware that are reported in each of the project's newsletters and on SpecialNet (a national special education computer network). A number of special education technology guides will also be presented. Many consortium products will be displayed and are available to member states.

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Doing It Interactively: Videodisc in Science and Employability Skills

Ron Laugen, Florida State University
Mike Sloderbeck, Florida State University

The Center for Instructional Development and Services at Florida State University has been developing microcomputer-controlled interactive videodisc (MCIV) instructional programs for science and vocational education for the past two years. This presentation describes the development process and demonstrates the courseware.

The science project, funded by the Palm Beach County Schools and the State of Florida, produced a one-disc prototype. The topic area, acid-base chemistry, was selected to fit into the field-test teachers' spring schedules. The objectives covered were related to both county and state standards.

The vocational education project, funded by the Florida Job Training Partnership Act (JTPA) Program Office, is currently underway. It will produce a seven-disc series on employability skills training for JTPA clients (disadvantaged youth and hard-to-hire adults), covering such skills as choosing an occupation, applying for a job, interviewing, and keeping a job. Two discs are already completed, with the remainder to be done through June, 1987.

The presenters briefly discuss elements of the MCIV development process:

1) instructional design
2) production
3) programming
4) field test and revision

Results of field evaluation of the courseware are also summarized.

Interactive aspects of each program are demonstrated, using both touchscreen and keyboard input. Of particular emphasis are question, feedback and remediation strategies, and MCIV simulation of an acid-base titration and a job interview. Finally, plans for developing a 20-videodisc high school science experiment library are described.

Contact for further information:
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Computer Literacy for the Middle Grades

Mary Pat Roberts, Sarasota County Schools
Doug Roberts, Sarasota County Schools

This presentation describes the computer literacy course currently being taught in all five of the middle schools in Sarasota County. The curriculum was developed locally and is in its second year of implementation.

Sarasota County defines computer literacy as awareness of the uses of computers in society, their history, and familiarity with computer eqquipment, including some hands-on activities at the computer and minimal hands-on programming. Course objectives, which are correlated to State Student Performance Standards, cover a wide range of topics: hardware and software use and terminology, history, societal issues, programming in Logo, word processing and data base management.

The curriculum consists of a teacher's guide, student booklet and consummable workbook, with activities to cover a six-week time span. Participants will receive course objectives, and sample lesson plans for a variety of topics. The curriculum will be available for perusal.

Contact for further information:
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Sarasota County School Board
2418 Hatton St., Sarasota FL 33577

BEST COPY AVAILABLE

Is Calculus Obsolete?

Paul Ohme, Northeast Louisiana University

Of course, calculus is not obsolete, but the computer has created an alternative gateway to advanced mathematics and a need for emphasis of discrete mathematics. The mathematical community has seen several articles as well as a private foundation supported group, recommending radical changes for the freshman mathematics for computer science majors and other mathematical students. Should these changes be implemented it would greatly modify the upper levels of the high school curriculum and provide a basis for intergrating computer science and mathematics in a segment of the high school curriculum. This presentation will illustrate by examples the pro and con of the freshman mathematic recommendations as well as the ramifications in the high school program. The presentation will deal with specifics with only a brief outline of the philosophical concepts involved.

Contact for further information:
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Northeast Louisiana University
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Troubleshooting the Apple IIe

Ward Hurst, Polk County Public Schools
B. R. Black, Polk County Public Schools

This presentation outlines procedures that can be implemented by local school personnel for general trouble shooting and preventive maintenance on the Apple IIe computer and its related peripherals such as disk drives, printers, and monitors. The presentation will include component level chip replacement and cleaning/adjusting procedures for the CPU, disk drives, printers and monitors.

In addition, procedures for districts to follow in order to obtain specialized technical training for their personnel on the Apple computer will be outlined, along with related costs.

Recommended diagnostic software and reading material will be suggested, and a handout outlining procedures reviewed will be distributed to take home.

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Polk County Public Schools, Box 391
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Write Questions with a Word Processor--Use them with the Computer

Lynn Oberlin, University of Florida

This presentation will show how questions and answers written with a word processor can be used with a short BASIC program to present material, on the computer, which is self correcting and self scoring. Simple instructions will be given with handouts which include BASIC programs. Ways of adding routines and the use of multiple-choice questions will be covered.

This procedure provides a way for teachers who have little or no knowledge of computers or programming to prepare instructional material for use by individual students. With a word processor, they need only to write a question, hit the return key, write the answer, hit the return key, write the next question, and when finished, write the word "END", and hit the return key. The material is then saved as a text file by the word processor. (A few word processors save the material as a binary file but then usually provide a program to change it to a text file. Bank Street Writer is an example.) With the short BASIC program, which will be on the handout, the teacher now has computer material which the students can use. The teacher with some knowledge of computing can customize the BASIC Program to expand the possibilities to fit the situation.

The material provided is for the Apple][family of computers, but the idea should work on other brands.

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RESOURCES FOR YOUR DRIVE TOWARD EXCELLENCE

Shirley Eikeland, State Facilitator
Florida Department of Education

This presentation features the resources of exemplary national computer programs available to Florida educators through the Public Schools Resource Center. Through the National Diffusion Network, which is funded by the U.S. Department of Education, these model technology programs share their successful instruction and management strategies with educators across the country who are meeting similar challenges. The successful practices and products are available to meet local efforts for a fraction of the developmental cost.

Many Florida educators are utilizing these resources because the programs represent the best of theory, research, and practical application. These exemplary programs were designed and tested by practitioners in local school districts, stringently evaluated by the Joint Dissemination Review Panel in the U.S. Department of Education and found worthy of dissemination to other school districts.

Participants will leave the session with information on resources for:

-research of effective methods of computer instruction and management,
-processes for employing these systems at local Florida sites, and
-a listing of a variety of applications for differing target groups.

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Computer Graphics in the Fine Arts and Commercial Art Curriculum

Norma Jane, North Miami Beach Sr. High
William Hofmann, Dade County Schools

This presentation describes a pilot program in commercial art at North Miami Beach Senior High that began in 1984 as well as plans for a magnet school due to open at South Miami Senior High in 1986. The role of computer graphics in the teaching of commercial and fine art is discussed along with an appraisal of the equipment used in the pilot program. Student work is displayed and various techniques employed by the students in producing the slides and prints are discussed. The hardware and software used in the pilot program are demonstrated.

The pilot program at North Miami Beach Senior High has used several Macintosh computers, a laser printer and a Thunderscan to introduce students in commercial and fine arts classes to the world of computer graphics. One modified IBM-PC with a high resolution graphics system and "Easel" software by Time Arts is used to teach and produce color graphics.

The magnet school due to open at South Miami Senior High in the summer of 1986 will emphasize television production. A large computer graphics laboratory is planned that will train students to produce graphics for television. Plans for the magnet school are presented and the problems of hardware selection are discussed.

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A DELPHI STUDY TO FORECAST THE EFFECTS COMPUTER TECHNOLOGY WILL HAVE ON ELEMENTARY SCHOOLS

Brent Willett, Durham County Schools, NC
Ms. Judy Cotter, Durham County Schools, NC
Ms. Darcy Berger, Durham County Schools, NC
H. T. Conner, Durham County Schools, NC

This presentation discusses the findings of a Delphi study to forecast the effects advancement in computer technology will have on elementary schools. This study was funded by the board of the Durham County Schools through its newly-implemented teacher research grant program.

The directors of the project describe the procedures employed in obtaining recommendations for items that were included in the Delphi instrument, the population that recommended the items and later assigned forecast ratings, the statistical procedures used in analyzing the responses, and the forecast findings.

The presenters contrast the differences in opinions among the sub-samples in the study, including respondents from business and industry, teachers, and school administrators. They also point out what the total study population and the sub-samples predict will be the effect the advancement of computer technology will have on elementary schools.

At the conclusion of the presentation on findings, the presenters will discuss the impact that the predictions of the respondents, if they occur in the future, will have on the training of elementary teachers, instructional techniques, and the curriculum. In this phase of the presentation, audience participation will be encouraged.

A total of 160 individuals responded to 75 items on a five-point scale to indicate the degree that they thought an event would occur in the future. Chi-square analyses and means and standard deviations were calculated to indicate the differences in opinions between and among study groups and the degree that each group and the total group thought an event would be a reality in the future.

Contact for further information: ~~Mr.~~ Brent Willett, Holt Elementary School, 4019 Holt School Road, Durham, NC 27704

ELEMENTARY KEYBOARDING--What Do We Do?

Karen Schmohe, South-Western Publishing Co.

This presentation discusses the issue of elementary keyboarding and its implementation into the classroom. The presenter identifies critical conditions for keyboard learning and demonstrates a software item, MICROTYPE, The Wonderful World of PAWS and its correlated text, COMPUTER KEYBOARDING, An Elementary Course.

The presentation describes the essentials of a keyboarding foundation, the equipment needed for learning, the appropriate materials for learning, and the teacher's role. With proper materials and instruction, elementary students can develop reasonable "touch" keyboarding skill to enable them to use a computer efficiently rather than a "hunt and peck" method.

Discussion is centered on appropriate grade levels for implementation, length of lessons, techniques in keyboard learning, and strategies to use in instruction. Such strategies include demonstration (modeling), observing, pacing, and evaluation.

Additional questions that are addressed include: 1) How much keyboarding is necessary? 2) How fast should I present the keyboard? 3) How should the class be organized? 4) How should student performance be evaluated? 5) What keyboard should be used?

The materials used in this demonstration were developed by the educational leaders in typewriting instruction and have been used in elementary classrooms with overwhelming success.

Contact for further information:
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Strategies for Using Microcomputers in Daily Classroom Instruction.

Gilbert J. Cuevas, University of Miami

This presentation describes a number of strategies designed to incorporate microcomputers into instructional activities at the elementary school level (grades 4-6). The purpose of the strategies is not to drastically change what teachers do in the classroom, but to help them (a) become aware of the different instructional roles microcomputers can assume, and (b) design instructional activities which utilize microcomputers.

The strategies follow a three-dimensional model. The model has three components: nature of the activity, computer role, and equipment requirements. The first component, nature of the activity, includes (a) preparation - activities which address pre-requisite skills; (b) computer-base - activities which utilize the microcomputer as medium of instruction, and (c) transfer - activities designed to either reinforce or generalize the concepts and skills learned as a result of computer utilization. The second component, computer role, addresses utilization of the computer as a device for A-V presentation, tutoring, simulation, gaming, or drill-and-practice. Equipment requirements address the number of machines required to carry out the particular activity.

A lesson plan form was developed which covers the components of the model. Teachers were asked to develop and implement a number of lesson plans during an in-service course. An increase in the utilization of microcomputers was found at the end of the training.

Contact for further information:
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School of Education and Allied Professions
University of Miami. Coral Gables, FL 33124

The Sofcrates Authoring System *

Susan U. Wager, Department of Adult and Community Ed.
Florida Department of Education

This presentation discusses the use of the Sofcrates Authoring system for Apple II microcomputers. The Sofcrates system is easy to learn and provides teachers with a way to develop tutorial CAI without the need of knowing a programming language. This authoring system is menu driven. Lessons are created by constructing text and or question pages, and then assembling them into a lesson.

The lesson display editors allow the construction of text and question pages. These editors give the user a free format for putting information on the page, allow the selection of alternate type styles and colors, and allow the inclusion of graphics and animation on text pages. Text pages may reference "detail" pages which are often used for extra help or elaboration. The question page editor allows the input of multiple correct answers, and the specification of a remediation page for wrong answers.

The lesson assembly editor allows a quick and easy modification of lesson sequence, the addition or deletion of lesson pages, and the specification of lesson branching. In all there are 7 types of branches allowed in Sofcrates including; 1) remediation, 2) optional, 3) percentile score, 4) unconditional, 5) continuation, 6) detail and 7) backpage. The student is also allowed during the running of a lesson to access an index of lesson pages or a glossary (if the teacher has prepared one). Another nice feature of the program is the ability to start at a specified page, eliminating the necessity of sitting through pages that have already been viewed in a previous session. A simple data collection system keeps track of the students' name and scores on the questions in the program.

Weaknesses of the program include a lack of utilities for deleting and renaming files, making it necessary to move back and forth from the operating system to accomplish some common authoring tasks. Another weakness exists in author options for the treatment of responses and feedback after questions. Overall, the strengths of the program far outweigh its weaknesses and the program is highly recommended for teachers desiring to produce their own software.

* demonstration disk will be available at cost ($2.00) at the session.

Contact for further information:

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Video Disc and Computers: A match made in heaven

Suzanne Spahn, Coordinator of Instructional Technology
Robert Buford, Instructor - Humanities
Broward Community College

Laser Video Disc technology has recently become a viable instructional delivery method. This presentation assists teachers and administrators in the exploration of different types of video disc systems which can be used both in the classroom and for individualized instruction.

The presenters discuss the **advantages and disadvantages of four (4) different video disc system configurations** applying the following criteria:

1. Versatility and adaptability with existing computer equipment.
2. Cost/Feature ratio factors.
3. Reliability and user friendliness of systems.
4. Availability of instructional material and ease of customizing already existing materials.

Demonstrations, using a Pioneer video disc player connected to an Apple IIe, an IBM and a Radio Shack model 100 computer, permit attendees an opportunity to see:

1. A single, one screen system using a key pad to access the video disc player.
2. A dual screen system (two monitors) connected to a computer which displays computer text information on one screen and the video disc picture on the other.
3. A more advanced system using one monitor and a video switching device which allows either computer text or video disc images to be displayed on the screen under software control.
4. The most advanced system, using one screen with both the computer text and the video disc picture on the same screen simultaneously.

Each of these system configurations will be demonstrated using generic video discs that can be used in teaching Art, Astronomy, Physical Science, Biology and Theater.

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Replicable Modules for Training Educators to Use Computers With Exceptional Students

Eileen Pracek, FDLRS/TECH
Kay Young, Bureau of Education for Exceptional Students
Razia Pullen, FDLRS/Reach
Gwen Henry, FDLRS/Westgate

This session presents an overview of the four following replicable training modules which have been developed by the Florida Diagnostic and Learning Resources System Instructional Technology Network:

1) Computer Literacy for the ESE Teacher
2) Selecting Software for the ESE Student
3) Integrating Software into the ESE Curriculum
4) Computer Awareness for ESE Parents

The content presented in these modules emphasizes the special knowledge and skills teachers and parents need to harness the capabilities of the computer to meet the unique instructional needs of exceptional students.

The format of the materials has been designed to meet the diverse needs of workshop leaders and participants. Although materials are organized under four general topics, each topic includes a set of sections or components which may be presented independently of one another or combined in a variety of ways. Only the logical sequence of certain sections limits this flexibility. Each section includes a stated objective, recommended activities, an estimated time for delivery, a list of required materials and handout and transparency masters. Notes for the instructor and resources are included when appropriate. Slides are available for selected topics.

The modules have been designed to be replicated by workshop leaders who have limited computer experience. All modules have been successfully implemented by FDLRS Instructional Technology Contacts.

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Uses of Computer Software and Hardware in Secondary School Science

John H. Evans , Lincoln High School

The amount of software written for secondary school science is increasing very rapidly. The amount of variation in the software in quality, instructional format, use of sound, etc., is tremendous. Despite the wide variations that do exist in the software it is possible to group most of this software into five distinct groups. The distinctions may be made by examination of the characteristics of each group. The groups of science software are:

]) Drill

2) Tutorial

3) Simulation

4) Laboratory simulation

5) Laboratory interface/utility

Characteristics of the software in each group determine the extent to which it may be used in the classroom. Availibility of computers and other specialized hardware again limits the use of some software groups.

This presentation examines some of the characteristics of software that are used to make the groupings. Software representative of each group is presented. The presenter discusses the uses for software in the classroom based on its grouping and the hardware available. The resources of the SAMS (Science and Mathematics Software) lab at Florida State University is presented.

Handouts on the presentation and information on the SAMS lab are provided.

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Project COFFEE - A high tech alternative for disaffected youth.

Rob Richardson, Director, Project COFFEE

This presentation will describe the four major components of Project COFFEE, highlighting the occupational training done in the high tech field. Project COFFEE was nationally validated by the Department of Education in 1981 and has been successfully replicated in schools nationwide. It is primarily a drop-out prevention program, and its uniqueness lies both in its high technology focus and its integrative approach to the curriculum.

The components of Project COFFEE are as follows:

1) academic - focusing on basic skill remediation based on individual educational plans

2) occupational - highlighting a hands-on approach to skills training, including job shadowing, internships, and work study. Students choose to study one of five areas: computer maintenance and repair, word processing, horticulture/agriculture, building and grounds, or distributive education

3) counseling - students have regularly scheduled group counseling sessions as well as crisis intervention as needed

4) physical education - adapted to promote cooperation and to develop outlets for physical energy and stress

The presentation will also explain Project COFFEE's successful partnership with Digital Equipment Corporation, a partnership which has developed to maturity over the past 5 years and now serves as a model for other school/business relationships around the country. Project COFFEE (in conjunction with Oxford Public Schools) has been a leader in this field and has much to offer other schools.

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Interactive Videotape Programs for Science Instruction

Dr. Mila E. Ignatz
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Florida A&M University

This presentation demonstrates various ways interactive videotape programs may be designed and/or used in the classroom to enrich and enliven the middle and secondary school curricula.

Videotapes can bring space, the underground, research labs, ocean floors, volcanoes, top scientists, etc. to the classroom. Edited tapes can stretch or collapse time scales. However, videotapes, in and by themselves, are passive and linear in delivery. With the microcomputer-videotape combination the development of a range of instructional activities never before possible with the videotape or the microcomputer alone is now feasible.

Interactive videotape allows instructional materials to appear on the screen alternately from the microcomputer or the videotape depending upon what is needed in the instructional program. The student has the option to watch selected tape segments as many times as desired. These and other advantages of the videotape combined with the capability of the microcomputer to allow for multiple student tracking and to simulate concepts provide a viable system to promote science learning in ways never before possible in the classroom.

Highly interactive science programs putting the student in the role of a scientist who is making observations, collecting data, interpreting data and making inferences and predictions from the data while the computer provides immediate feedback regarding the correctness of his/her answer are demonstrated.

Techniques to capture student interest and to provide three-level student tracking (problem-solving and two difficulty levels of tutorial) are discussed. Materials make use of commercially-available videotapes and videotapes developed inhouse. They are stand-alone and field-tested instructional materials. No programming or electronic expertise is necessary.

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Telecommunications: Online for Educators

Al P. Mizell, Nova University
John A. Scigliano, Nova University

Telecommunications is proving to be the key to unlocking the Information Age treasures for educators. The presenters review world-wide telecommunications activities as briefly described at the July, 1985 World Computer Conference in Norfolk, Virginia. Moving from this overview of educational telecommunications, the presenters describe the establishment of a series of graduate programs at Nova University using a computer-based delivery system. They go on to describe current and potential world-wide impact of such computer-based online doctoral, educational specialist, and master's degree programs based upon their work with such programs over the past three years.

The authors describe the experiences they have had using modems, packet-switching networks, teleconferences, online tutoring, large statistical packages, database utilities, and electronic writing improvement tools. These dimensions of technology represent just a small sample of educational life online in the three-year old electronic delivery system. The advantages, challenges, and problems inherent in the use of modern technology based upon these experiences with the UNIX* operating system are used to suggest ways that educators and trainers can use telecommunications to improve the educational process. Issues and problems in online learning faced by the more than 300 graduate and undergraduate students using this system across the country are covered.

Currently, students in a vast array of educational settings are exploring the UNIX system and its various utilities at Nova University. The secrets of success in this new environment are shared to help improve teaching and learning in K-12 through university education. Experiences of approximately 100 students in the industrial and business world are also covered. The use of the "amazing" Writers' Workbench is one such example.The future of educational uses of telecommunications is a glimpse into tomorrow!

* UNIX is a trademark of AT&T Technologies

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Creating Turtle Words

Margaret A. Moore

As students explore and experiment in a LOGO environment, they will begin to form new relationships with knowledge. Students learn to become independent, self-responsible learners while developing problem solving skills and discovering solutions to problems or more adequate solutions to old problems.

The following methods, techniques, and procedures have been designed to expand programming skills in LOGO word procedures. Following Papert's theory of relating the known to the unknown, the skills to be acquired are embedded within the meaningful and familiar context of language structure. The activities, which are structured to progress from concrete to abstract experiences, help students establish a firm connection between activity and the creation of the formal abstract concepts of recursion, inputs, and outputs in word procedures.

The methods, techniques, and procedures are described in three modules which include various activities, recommended materials, and overhead transparencies. The activities within each module are structured to move from concrete, sensiormotor experiences to more abstract experiences. By relating the student's knowledge of the language structure to the language of the computer, the teacher can provide the means to conceptualize and capture computer terminology and principles. The student's knowledge of the language structure provides a bridge to relate what is new, computer language, to something that is known, the language structure.

To further enhance these skills, a framework, the Design Process, has been devised, creating the opportunity for the transfer of learning to different or similar problems in the LOGO environment. When students are taught how to organize their knowledge, they can go beyond what they know to find novel ideas and new insights. The Design Process enables teachers to guide students through the construction of word procedures while demonstrating how to organize their thinking skills to solve problems, Students can then employ these skills as they explore and experiment with word procedures and design their own programs.

Thus, as students are actively involved in the construction of LOGO word procedures, they learn to construct their own knowledge. When knowledge is embedded within another context and is not in itself the primary goal, knowledge is more effectively acquired. Similarly, the activities--Generating Compound Words and Turtle Word Creations--embed the primary goal of using and understanding LOGO commands in word procedures.

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How Do Young Children Interpret Computer Generated Pictures?

Jeffry A. Hurt, University of Florida

This presentation reports the findings of a study conducted to determine how children interpret computer generated pictures. More specifically, it examines whether primary aged children will identify an object in a camera generated representation as being the same object as one that they see in two different computer generated, digital reproductions of that object.

A review of the literature indicates that assumptions concerning the use of computer generated pictures are based upon what is known about pictures in camera generated and manually generated formats. In other words, it is assumed that a picture of a car in an educational computer program could serve the same function as a picture of a car in an instructional program in print format. It follows that, in order for the student to use the two representations to achieve the same function, he must see them as the same object. However, a computer generated picture of a car does not necessarily bear a high degree of resemblance to a camera generated or a manually generated picture of a car. The assumption that a student, especially a primary aged student, can perform the cognitive functions necessary to recognize that two physically dissimilar pictures as representations of the same object is one that perhaps we should not be making.

As a means of testing the ability of primary aged children to interpret computer generated pictures, first grade students were shown slides of three different objects, each of them in three different formats; a photograph of the object, a computer generated scan of the object, and a computer generated picture of the object. Assessment of student response to questions concerning identification and interpretation of the pictures determined whether students interpret the various pictures similarly. Results of the assessment, as reported in the presentation, establish a foundation for further research about the use of computer generated pictures and increase understanding about children's ability to interpret digitized representations.

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The Elementary Word Problem Toolkit

James A. White, Florida Center for Instructional Computing
Douglas Woolley, Florida Center for Instructional Computing

This presentation describes an implementation of the concept of managing and making more efficient the task of teaching word problem solving skills in Elementary level mathematics through the use of customized database software. Included in the presentation is the demonstration of protocol software developed at the Florida Center for Instructional Computing.

Mathematics teachers will attest to the inability of many students to solve even rudimentary word problems. A formal study of the problem conducted in 1981 by Dr. Andria Troutman with teachers in two Florida school districts revealed that students don't see a wide enough variety of problems and are rarely taught to recognize appropriate operations from the many different forms in which they are manifested. For example, students are almost always introduced to subtraction as *take-away* and can usually recognize the operation in that form. There are, however, at least three other types of word problems requiring subtraction for solution that don't involve take-away. Problems like the following often leave students perplexed.

> "Mary wants to buy a toy that costs $7.00. She has only $4.00. How much more money does she need?"

From these results, a means of classifying word problems has been developed. Word problems involving each of the four basic operations may be divided in to distinct types on the basis of attributes. The teacher's job is to see that students are exposed to all types.

Even when teachers are aware of this issue, it is still a complex task to see that each and every student is aware of each and every different type of problem. This problem is not helped by the fact that few of the elementary math texts published contain a mix of problems varied enough to do the job. Microcomputer database software can be used to manage the task. At the Florida Center for Instructional Computing, a database to almost 500 different word problems has been developed. All the problems are classified by attributes and the database can be queried on that basis to produce unique worksheets and tests. To complement the database, customized management software has also been developed.

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Title: Using the Microcomputer as an Instructional Management Tool

Lee J. Rodel - Hopkins Public Schools, Hopkins, Minnesota
Ed Hamil - J. B. Walker Junior High School, Orlando, Florida
Linda Swaine - Osceola High School, Kissimmee, Florida

This presentation describes the Mastery Management System, a proven, generic, microcomputer-based instructional management system and its use in facilitating educational decision-making. Developed for educators by educators at the Hopkins Minnesota Public Schools and operating on the Apple II microcomputer, the Mastery Management System scores objective-related tests and determines, records, and reports both individual student and student group progress on the attainment of user-defined objectives or skill areas.

As a validated project, information about the Mastery Management System is disseminated through the National Diffusion Network. To date over 700 schools across the country have implemented this instructional management tool in a wide variety of subject-matters and grade levels.

This presentation shows some of the varied uses of the Mastery Management System. Basic features of this generic management system are presented by describing its use with the Houghton Mifflin reading program in the Hopkins elementary schools. Key to this implementation is the management system's ability to facilitate "diagnostic teaching" activities of teachers directed specifically at reading skills not yet mastered by students. In addition, reporting to parents and curriculum review and revision are greatly enhanced using printed Mastery Management System reports.

Because of its generic nature, the Mastery Management System lends itself to a variety of uses. Presenters from J. B. Walker Junior High School in Orlando and Osceola High School in Kissimmee describe their use of the system in secondary schools. Junior high students are tested on required math skills with follow-up instruction provided to address deficiencies identified. Senior high students are tested on math and communication skills. Individual student remediation activities are provided by compensatory education teachers in skill areas identified through use of the Mastery Management System.

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ARTIFICIAL INTELLIGENCE AND EDUCATION

Ron Good, Florida State University

This session defines artificial intelligence and describes several applications that show promise for education. Various types of AI applications to education are discussed, including teaching, diagnosis, and teacher training. The architecture of a diagnostic system (DIPS for Diagnosis for Instruction in Problem Solving) now being developed at Florida State University is presented.

One of the interesting applications of AI to education is the use of the "think-aloud" interview technique to study the problem-solving procedures used by expert and novice problem solvers. In less than ten years a considerable body of research has developed that offers interesting possibilities for instruction to help improve the problem-solving abilities of novices. Work in this general area called "cognitive science" has already begun to influence decisions in curriculum and instruction.

Machine learning also is an area receiving considerable attention in AI work, including learning by analogy, learning from examples, and learning by discovering patterns in data. Examples of such systems are presented, with possible implications for education.

Learning with understanding or meaning is a function of how the material has been stored, whether in human or machine memory. It is reasonable to assume that we can learn more about human intelligent behavior by studying machine or artificial intelligence.

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Young Children and Microcomputers - Positive Research Findings

Priscilla D. Huffman, Ph.D., University of Wisconsin-Stout
Janice M. Keil, Ph.D., University of Wisconsin-Stout

This presentation describes research finding to date on the positive results which have been obtained through the use of microcomputers with young children and other non-readers.

Specific attention is given to results relevant to the following, as well as other categories:

1) methods of interacting with computers;
2) social interactions among peers;
3) age and gender variations;
4) modes of presentation;
5) creativity; and,
6) time and attention given to computer tasks compared with other instructional activities.

These research findings include results from national and international studies, as well as the presenters' current research with young children.

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ROBOTICS IN ELEMENTARY AND MIDDLE SCHOOL

Gary W. Tubb, University of South Florida
Annie C. Mitchell, Morgan Woods Elementary, Hillsborough

Concepts and examples in robotics and computer process control appropriate for upper elementary and middle school are identified in the presentation. Projected components of Robotics literacy are identified and discussed. Specifically the presentation will address four questions:

1) What is a robot?
2) Why are robots used?
3) What can robots do?
4) How do robots affect people?

Concrete examples of 10 different projects on robotics and automated devices that upper elementary and middle school children may use to learn about industry and technology will be demonstrated. Robotic concepts of interrupt, queue, priority request, and feedback will be discussed. Emphasis will be placed upon relating computing, mathematics, and science concepts to hands-on robotic activities.

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Designing and Implementing an In-Service Training Program and Computer Lab for Chapter 1.

Lynn Carswell, Jefferson County Schools
Nada Bishop, Jefferson County Schools
Jeanne Barker, Maclay School

This presentation discusses the procedures of setting up and implementing a computer laboratory and in-service training program for Chapter 1. An extensive developmental program is outlined in the spring of 1985. This plan includes designing the computer laboratory layout, a software evaluation form, the use of extensive software previewing, in-service training workshops for all Chapter 1 teachers, and the use of a computer consultant for continuity within the program. Using key skill guidelines established by the Chapter 1 teachers, all software is coded to these skills for ease of use. The subjects coded are reading and math. These skills are coded for kindergarten through grade 4.

The time table for implementing this program is as follows:

1. Identify objectives for implementing computers into Chapter 1 curriculum.
2. Identify key skills to be coded to computer software in reading and math (Grades K-4).
3. Present layout drawing of computer lab design. This layout includes special adjustable chairs, computer tables, and electrical surge protectors.
4. Develop in-service training calendar to create a software evaluation form, preview software, code software, and work in conjunction with classroom teachers.
5. Implement program with students.
6. Evaluate the original objectives and revise if needed.

TIME LINE:

May - Identify long and short term objectives
June - Create lab design
June - Develop software evaluation form
July - Present in-service workshops
August - Present in-service workshops
September - Teachers implement programs
October - Evaluate and revise

The time line is discussed in great detail. Specific examples of sample lesson plans, correlations with key skills are given, and recommendations for working with classroom teachers are presented. Posters and pictures are used in the presentation.

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FOR ADULTS ONLY! - Computer Literacy for Parents

Bob Bruggner, NDN Computeronics Program

Mike Eason, Leon County Schools

Harry Buerkley, Leon County Schools

This presentation will discuss the procedures and activities of an adult computer literacy course presently being offered to parents of students enrolled in Leon County's Gifted Program. Areas to be discussed include how to design, structure and implement an adult computer literacy course as well as effective teaching strategies for teaching adults with little or no previous computer experience.

A course syllabus containing objectives, activities and evaluation form for each of the following topics will be reviewed during the presentation.

1) Introduction to Hardware and Software
2) Word Processing
3) Programming
4) Software for Home Management
5) Computer Graphics
6) Home Educational Software and Simulations
7) Interfacing Students and Parents

For additional information contact:

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The Software Evaluation Exchange Development (SEED) Model

Ms. Elsie L. Brumback
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N.C. Department of Public Instruction

This presentation presents visually a project underway by seven southeastern states to develop a software evaluation exchange model designed to help educators identify and obtain top quality instructional software. The states involved in the project are Alabama, Florida, Georgia, Louisiana, North Carolina and South Carolina.

The group, dissatisfied with the current state of software evaluations, has developed a common software evaluation tool and is actively linking hands to improve the quality of computer courseware.

Each state selected its own cadre of evaluators who received extensive training in the various aspects of software review and evaluation during October and November. Now in the initial evaluation period, the six states in the coalition are expected to have anywhere from 100 to 300 programs evaluated by next summer when the group plans to begin work on the next phase of the project---increasing the number of evaluators, improving links with the software industry, and tackling the problem of how to involve classroom teachers in the process.

SEED task force members from several of the participating states will be available after the visual presentation to answer questions from the audience regarding the various aspects of the model.

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The Design & Development of an Interactive Video Program

Roberta Stokes
Coordinator of Academic Computing
Miami-Dade Community College - South

This session discusses the step by step process of designing & developing an interactive videotape program. An interactive videotape program developed for a mathematics program in Statistics & Probability is demonstrated. This program which is now being used at Miami-Dade Community College - South Campus was primarily designed to assist students in preparation for the math CLAST but is also used by students in math classes. The program consists of four videotapes with each part taking a student approximately 20 minutes to complete.

This presentation provides information about the following areas:

1) Features of an Interactive Videotape Program
2) Description of the Components of an Interactive Videotape System
   - Apple IIe Computer & 2 Disk Drives
   - Sony, SLO 323 Videotape Player
   - BCD 450 Interface Boards
   - Super PILOT Programming Language
3) Establishment of an Interdisciplinary Team
   - Subject Matter Expert
   - Media Production Staff
   - Academic Computing Coordinator
4) Review and Analysis of Lesson Content & Design
5) Development of a Lesson Flow Chart
   - Modular Organization of Content
6) Design and Programming Considerations
   - Development of the Script
   - Appropriate Visuals Defined
   - Identification of Computer Frames
   - Menu Options Determined
7) Step by Step Process
   - Filming of Videotape
   - Development of Graphics for Videotape
   - Review of Videotape (audio & visual)
   - Programming of Computer Frames
   - Review of Computer Screens
   - Final Print of Videotape Prepared
   - Logging & Coding of Videotape
   - Inserting Frame References into Computer Program
   - Final Testing & Review of the Program

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The Texas Plan for Computer Literacy

Vicki S. Smith, Coordinator for Computer-Based Instruction
Region IV Education Service Center-Houston, Texas

The state of Texas is moving toward a number of requirements for both teachers and students in areas related to computing. Mandated is a one semester course at the seventh or eighth grade for instruction in computer literacy. The essential elements for this course include applications, programming, problems and issues of computers in society, computer-related terminology and use, and history and development of computers. This session will describe the following facets of implementation of the course:

* development of a curriculum guide;
* competency testing of identified teachers;
* laboratory planning;
* student testing; and
* a regional training network.

The presentation will additionally touch on an expanded focus beyond this initial course. Included will be issues related to computer science certification and testing, computing competencies for all educators, related legislative activities, and projected trends.

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Santa Rosa COMBO-Computer Operated Management of Behavioral Objectives

Joel G. Corley, Santa Rosa County Schools

This presentation discusses the development, implementation and dissemination of the Santa Rosa COMBO, a curriculum and student information management system for Exceptional Student Education (ESE) programs. A comprehensive program designed for use at the school and/or district level, the COMBO provides a computerized system for the:

1) development of Individual Educational Plans (IEPs),
2) monitoring of student progress of meeting IEP goals,
3) documentation of the mastery of minimum student performance standards and student outcomes,
4) sequencing of learner objectives for all ESE programs, grades prekindergarten through 12,
5) assignment of learner prescriptions,
6) monitoring of classroom/program performance,
7) systematic reporting to parents.

The COMBO maintains a bank of approximately 10,000 standards, skills, goals and objectives from which ESE personnel can develop, monitor and maintain IEPs. Current development of learner prescriptions and mastery tests for each item are being added to the system.

The system was developed through funding from the Florida Department of Education, District Management Services School-Based Management Grant and P.L. 94-142 formula allocation. It is designed to be used with Radio Shack hardware and modified C.L.A.S.S. software.

The presentation provides participants with product samples and review of product materials.

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An Educator's Productivity Tool - The Truly Portable Microcomputer

Wilbur P. Dershimer, Jr., Seminole Community College
Elizabeth L. Dershimer, Seminole County Public Schools
Sanford, Florida

This presentation discusses how the "Truly Portable" microcomputer, such as the TRS-80 Model 100, can be used by educators to increase productivity and accuracy in minimum time. The presenters use the Model 100 daily for tasks such as drafting letters, memos or classroom materials, summarizing meetings, taking minutes, producing agendas, developing tests, completing forms, filing data, and simple spreadsheet applications. Although the presentation will discuss the usefulness of the TRS-80 Model 100, other vendors, such as NEC, Epson, and Olivetti, make similar or improved briefcase/laptop computers.

Each presenter has some unique ways of making this tool a productive time-saver. In addition to sharing the potential of the "Truly Portable" microcomputer, the presenters have prepared a handout including "Tips for Use" and BASIC program listings. The program listings are included to provide programs that are able to make more use of the built-in software and to accomplish other occasional tasks, such as sorting alphabetically and communicating with an Apple.

The Model 100 weighs less than four pounds and operates on four "AA" batteries or optional AC adapter making it possible to use a computer anytime, anywhere. The 100 has five programs and a modem built-in. The main features of the ROM software include the ability to develop (or load) and run your own programs in BASIC and simple-to-use telecommunications software and word processing software.

A convenient feature of the 100 is the ability to retain data when power is turned off. It has a full-size typewriter keyboard with an eight line by 40-character display. The internal storage is initially 24K, but expandable to 96K. Other features include a parallel printer, RS-232C communications, cassette, bar code wand, disk drive/video, and disk drive interface. There is a ROM slot for a variety of ROM chips, such as Multiplan. Disk drives are not essential because the telecommunications software, RS-232C communications port and built-in modem makes communicating with an Apple, IBM-PC or other microcomputers very easy.

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Advanced Placement Pascal: An Ongoing Discussion

Bob Baird, University of Central Florida
Mike Hynes, University of Central Florida

This is an ongoing discussion of the methods and madnesses of teaching Advanced Placement Pascal. The emphasis last year was on the availability of textbooks and instructional materials; the emphasis this year is on "What Does/Doesn't Work?". For many of us this has been our first full year of implementing an APT curriculum and through sharing this experience perhaps we can minimize the reinvention of the wheel.

The discussion includes, but is not limited to, 1) What's new? In this area, current information concerning the AP test itself is shared - grading, test items, outcomes, and impact on placements are discussed. Also, what's new in the way of books and software is discussed. 2)What works? In this area, the discussion focuses on materials and methods that have proven useful in the actual fire of the classroom. Hopefully this will represent the beginnings of a meaningful examination of scope and sequence for AP Pascal curriculum. 3)Finally, what doesn't work? In this area, the discussion focuses on what hardware/software combinations have proven to be more trouble that they're worth. This part of the discussion is for erecting bridges over chasms so that those behind us don't have to fall into the same holes we fell into.

As in previous years, this session will begin with a general discussion and information sharing format then proceed into a debugging session where specific problems encountered by members of the group can be addressed collectively.

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Preparing Computer Educators

Eileen Boyle Young, Spalding University, Louisville, KY

This presentation explores applications of computers in the classroom through a state certified (KY and IN) pilot program in computer education for teachers K-12. The program was designed and implemented in 1983, at Spalding University, School of Education, Louisville, Kentucky.

The author of the program describes the rationale and course content of each of three state certifications in computer education:

1. Kentucky certificate endorsement K-12 as a Specialist in Computerized Instruction (36 graduate credit hours)
2. Indiana certificate endorsement K-12 as a Computer Educator (15 graduate credit hours)
3. Kentucky certificate endorsement 5-12 as Computer Programming Teacher (21 graduate credit hours)

The Specialist in Computerized Instruction is a degree program: M.A. or Ed.S.. Program outlines, objectives and evaluation measures are discussed and the results of an interim (1985) student evaluation are shared. As time and interest allow, syllabi for the 15 graduate courses in the program are described.

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An Overview of Teleprocessing and Networking Concepts

Vicki Turner, Northeast Regional Data Center

This session introduces computer communications concepts. It is intended for users of small or large computers who are familar with basic computing concepts, such as binary, bits, ASCII, etc., but who want a better understanding of how information is sent from a terminal to the CPU or from one computer to another.

The presentation begins with a definition of a typical communications system, which is then applied to the telecommunications environment by looking at where the information being sent to a computer comes from, how that information is physically transmitted, how errors are detected, different types of protocol (or standards of transmission), and advantages and disadvantages of different types of signals.

Asynchronous, synchronous, remote, local, baud, parity, channel, serial, parallel, and protocol are some of the terms which are explained, using examples from the State University System Network and the Florida Information Resource Network (FIRN). A handout listing recommended reading for a more indepth understanding is provided.

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TEACHING GEOMETRY USING MICROCOMPUTERS: A DYNAMIC APPROACH

Molly Weeks, Dade County Public Schools
Joanne Urrutia, Dade County Public Schools
Dr. Edwin McClintock, Florida International University

This presentation concerns the use of computer programs to create environments for geometric explorations. The ability to display colorful, precise, dynamic drawings and provide instant information about them makes a computer program a natural way to give students a visual basis for developing geometric intuition.

Among the advantages of the computer programs demonstrated in this presentation is the ability to simplify the environment in which the student makes explorations. One of the ways a program does this is by performing necessary computations, such as finding the area of a figure. This allows the student to concentrate on important ideas instead of on tedious arithmetic which is often a source of errors. A program can also provide an inexhaustible source of randomly generated figures or of figures drawn precisely to the user's specifications. Pencil, protractor, and ruler drawings, while desirable in themselves, often cause the same complications as do computations.

Geometry students often lack an adequate concrete foundation for even such basic concepts as angle measure and area. They find themselves proving theorems without knowing what they are talking about. So, in this session, computer programs and commercial software that make geometric concepts visual and concrete are shown. Emphasis is on developing the student's ability to visualize geometric ideas, experiment on particular figures, and form and test hypotheses about general cases. The material demonstrated provides opportunities for directed explorations that develop the user's intuition to form a firm foundation for proofs.

Sample demonstrations, recommendations for specific software, and suggestions for writing BASIC and Logo programs that develop geometric concepts are presented. Handouts include sample computer lessons and an annotated software list.

Although the material presented deals with secondary school geometry, the techniques illustrated and the programming suggestions are of use to all teachers trying to help students develop concrete, visual representations of concepts.

Contact for further information:
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Florida CHOICES .... Now Mainframe to Microcomputers

Glenn Thomas, Assistant Director
Center for Career Development Services
Florida Department of Education

The State of Florida's computerized career, placement and educational system (CHOICES) has recently developed a scholarship/financial aid file, a military career file, and a microcomputer delivery system. This session describes these new enhancements, microcomputer sessions description. Access via the Florida Information Resource Network (FIRN), and the new "colorful" IBM-PC stand-alone version (CHOICES III). The State of Florida's CHOICES system is a network of almost 200 computer terminals and microcomputers located throughout the state of Florida. These terminals are connected to information stored in the mainframe computer at Tallahassee. The Florida Information Resource Network (FIRN) is also being increasingly used to provide access to a variety of microcomputers. Recently a stand-alone version of the system has been made available (CHOICES III). This version runs on an IBM-PC and uses color to reinforce the learning process. CHOICES can be found in Florida high schools, private colleges and universities, as well as prisons and vocational-rehabilitation centers. CHOICES contains information on over 1300 careers that are available in Florida (Career File) including some 200 recently added military careers.

The system also has data on more than 600 secondary institutions with some 8300 programs of study which are located in Florida (Education File). The "user-friendly" computer program interacts with the user's responses to specific questions in order to aid the client in choosing a career and/or a school. The more than 100,000 people who use CHOICES each year can also get a daily listing of over 11,000 jobs from the "Job Bank" information furnished by the Florida State Job Service.

The system is expanding to incorporate a new addition, the Scholarship/ Financial Aid File. It provides clients with an overview of the financial aid process, general information about financial aid, as well as specific information on particular financial aid awards.

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Computer Literacy Before They Go To The Lab!

James A. Constande, Duval County Schools
Rosemary E. LaValley, Duval County Schools

This presentation discusses and illustrates a variety of activities designed to implement a computer literacy program within the regular classroom. The activities presented are tailored to the classroom to reinforce computer skills needed to interact with the computer in a lab setting.

Duval County's computer curriculum places special emphasis on critical thinking and problem solving techniques. The presenters have developed activities to enhance the students mastery of these skills:

1) Use of appropriate computer vocabulary
2) Historical developments in computing
3) Identification of a computer's major functions such as input, memory, processing, and output
4) Selection of a logical sequence of steps to perform a task
5) Computer related occupations and careers
6) Social implications of computer utilization

The presenters use visual aids to show students of various grade levels interacting with computer related material in a classroom setting without the use of a computer. Students are depicted in the following areas:

1) Language Arts
2) Mathematics
3) Social Studies
4) Science

During the past three years, Duval County's educators have been involved in the implementation of a computer literacy program. The impact of this program has not only dealt with the use of microcomputers, but with the correlation of computer related skills within the established curriculum.

Contact for further information:

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THE WEDDING OF COMPUTERS AND COMPOSITION--CHIPOLA FACULTY AND STUDENTS SAY "I DO!"

Mertice B. Ringer, Chipola Junior College
Ruth E. Davis, Chipola Junior College

Chipola Junior College now requires all of its Freshman Composition students to compose their essays on a computer. This presentation will discuss the process, the joys and tribulations, by which Chipola's Computer Writing Center was born, and demonstrate the editing capabilities of the P F S WRITE word processing system, using an APPLE IIe Computer, in teaching composition.

The emphasis on computer literacy plus the grading of compositions made necessary by the Gordon Rule requirement of 2000 words per semester hour was the matchmaker in the combining of computer literacy and essay writing. The P F S WRITE word processing system was chosen because it's easy to use and the copy appears on the electronic page exactly as it will appear on the hard copy. The editing features of P F S WRITE will be demonstrated, using an APPLE IIe computer and a large viewing screen.

Chipola's experience with the writing center is a good one with faculty and students. Teachers love it because final drafts have fewer errors, thus making paper grading much easier, and students love it because rewrites are a snap.

Contact for further information:
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The Instructional Designer: The Missing Team Member

Lee J. Mullally, University of Florida
Elizabeth Downs, University of Florida

Computers in education are only as effective as the software that is available for educational uses. This presentation describes the importance of including an instructional designer, a programmer and a subject matter expert in the development of educational software. The presenters focus on the role of the instructional designer in the team approach.

Instructional designers apply a systems approach to the design of educational software. The systems approach includes analyzing learner characteristics, identifying objectives, applying principles of learning and motivation, and formulating student performance measures. The instructional designer analyzes the intended learners to determine learner characteristics such as content knowledge, educational cognitive style, motivational level, social background and personality type which would effect the software design. Based on input from the subject matter expert and the analysis of the learners, the instructional designer then identifies the instructional objective. The instructional objective guides the instructional sequence and the methods of evaluation within the educational software. Having identified the learner characteristics and the instructional objective, the instructional designer incorporates this information into the development of instructional strategies. Prerequisite skills, meaningfulness, novelty, pleasant conditions and consequences and active appropriate practice are among the principles of learning and motivation that must be followed. Methods for evaluating student performance are determined by the stated instructional objective, the learner characteristics and the instructional strategies that have been identified. The designer selects those diagnostic, formative, and summative measures that are most appropriate for evaluating students.

This presentation describes the instructional design components of learner analysis, instructional objectives, instructional strategies and evaluation of student performance as they relate to the design of educational software. Using specific examples, the presenters discuss how each of these components influence sofware design.

For further information contact:
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Educational Media and Instructional Design
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ADULT LITERACY: THE VERDICT IS IN - A CASE FOR COMPUTERS.

Jean U. Brinkman, Jacksonville Public Libraries
Computers and Literacy Program Director
Anthonee' J. Patterson, Jacksonville Public Libraries
Computers and Literacy Program Assistant

This presentation describes the planning, development and implementation of Computers and Literacy (CAL), an adult literacy program at the Jacksonville Public Libraries. The presenters discuss selecting the appropriate software for adults reading at a third to sixth grade level, finding and keeping students, measuring student progress and evaluating the success of the program.

CAL is a demonstration project begun in April, 1985, which is funded by a Library Services and Construction Act (LSCA) grant through the State Library of Florida. Individualized instruction is given to functionally illiterate adults with a third to sixth grade reading level. CAL intends to bridge the gap between programs such as Learn To Read and Adult Basic Education. Software used in CAL concentrates on word attack skills, phonics, reading comprehension, vocabulary development, spelling, basic math and life skills.

Also Discussed are: philosophy and goals of the program, contacts with referral agencies, publicity, what's good and bad software and why, and matching needs of students to software.

Contact for further information:
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Closing the gender gap: Working with girls on computers.

Dr. Lucy Fuchs
Professor, Division of Education
Saint Leo College
Saint Leo, Florida 33574

This presentation discusses the gap that is growing between the sexes in computer education. Already it has been noted that boys are becoming more adept at all computer skills except word processing. This is clearly related to the training of boys to be managers and girls are to be secretaries. If this gender gap is not closed while boys and girls are in school, it may never be closed.

In most elementary schools boys and girls are given nearly equal opportunities and encouragement to get acquainted with computers and to use them regularly. However, the situation changes when these boys and girls reach high school. High schools tend to have regular computer courses and boys are encouraged to take these. The reasons are many and will be explored in this presentation.

The presenter will, after giving background statistics and information, on the present situation, offer suggestions for improving the situation. The first step of change must be awareness of what is happening. Then some very specific activities are suggested. These include the following:

1. Better training of teachers, especially female teachers, in college preparation for teaching.

2. Re-evaluation of school policies concerning the use and allocation of computers.

3. Efforts on the part of all concerned to make it possible for girls to see computing as an appropriate and feminine activity.

4. Careful selection of software to make sure that the activities appeal to both girls and boys.

Participants in the session will receive handouts outlining the information, a survey that they can use in their own school, and suggestions for software and its use related to this topic.

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QUILL: Computer-based Writing for Grades 3-12, a nationally validated program.

Denise Blumenthal, QUILL Coordinator, Andover, Massachusetts
Donna Miller, Program Consultant, Language Arts, Orange County Public Schools
Orlando, Florida
Sue Rutledge, Reading Specialist and QUILL Local Facilitator, Jackson J.H.S.

QUILL is a set of software programs designed to help students in grades 3-12 improve their writing skills. QUILL consists of four software "tools" students use to plan, compose, edit, revise, store and print written work. These tools are the PLANNER, the LIBRARY, the WRITER'S ASISTANT, and the MAILBAG. These programs help students a different stages in the writing process: prewriting, composing, revising, and sharing.

Developed over the course of three years, QUILL has been piloted and evaluated by educators in urban, rural and suburban settings. Its data has been submitted to the U.S. Department of Education's Joint Dissemination Review Panel from which it received national demonstration approval. QUILL is being used by teachers and students throughout the United States.

This presentation will highlight the major features of QUILL. Participants will have the opportunity to try out the software which works on an Apple IIE computer. They will also have the opportunity to hear from two Florida educators who have implemented QUILL in Orange County. They will describe the QUILL training, how teachers and students have responded to the program and the evaluation they conducted which attests to QUILL's effectiveness.

Participants may discuss current efforts with computers and writing with the presenters to see if QUILL may fit into their future plans.

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The NETWORK 290 S. Main
Andover, MA 01810

Interactive Video Instruction in Schools

Presenters:
Jeanne Barker, Maclay School
Keith Douglas, Regional Manager, SVE
David Bowman, Product Development, SVE

The purpose of this presentation is to present the classroom use of the multidisciplinary approach of using an interactive video disk vs other methods of instruction. The original field test (completed in 1983-84) is presented as well as the current study conducted during 1985.

The purpose of presenting a subject via these mediums: 1) film strip and cassette tape, 2) computer disk, 3) laser disk is to utilize a combination of multisensory approaches, the study conducted involved both elementary and middle school students in public and private schools as well as teachers and administrators from the Florida Model Micro computer Training Program.

The first laser disk pilot program involved the use of a Pioneer 1000 and Commodore Software in Social Studies. Approximately 110 teachers and 175 students participated in the pilot program. Although the project was well received, it was decided that the next venture use a more complete package including film strips, cassettes, computer disks, study sheets, as well as the laser disk. The programs were developed for the Apple Computer and the laser disk runs on a Pioneer DL-V4000.

The purpose of the second pilot project was to set up three control groups. All groups were given pre and post tests. One group uses skill sheets that cover four study skills; group II views a film strip and completes the skill sheets; group III completes one disk of the interactive video-disc program and the skill sheets. The student population includes 50 elementary students and 25 middle school students. Group I - 25 students; Group II - 25 students; Group III - 25 students. Factors used in correlating differences in scores are: age, sex, reading level, and actual time on task.

The pre-test covers four study skills: taking notes, reading comprehension, understanding maps, and outlining. The testing pilot covers a four week period.

The subject matter covered is the Lost Civilization Expedition. The students spend time studying Pompeii and the Kingdom of Tut.

Contact person:
Jeanne Barker, Elementary Principal, Computer Coordinator,
Maclay School, 3737 N. Meridian Road, Tallahassee, Florida 32312

Frameworks, Summer Institutes, and Minimum Student Standards in K-12 Computing: A FORUM - 2.0.

Moderator - Gary W. Tubb, IC Dept. - University of South Florida
Panel - Peter Bruggink, IC Supervisor - Pasco County
Margaret Hackworth, IC Supervisor - Pinellas County
Chuck Hutinger, IC Supervisor - Sarasota County
Lee Osburn, IC Supervisor - Hillsborough County

A panel of school district supervisors of instructional computing will discuss the ramifications and impact of K-12 computing in Florida. Special attention will be given to the process that districts employ in meeting state guidelines in computing. Each panelist will discuss how his/her district is implementing the 14 existing (and forthcoming) computing "frameworks", summer institutes in computing, and instructional programs that attend to meeting minimum student standards in K-12 computing. Interaction with the audience will be encouraged. The purpose of the panel discussion will be to foster "sharing" of issues that are currently confronting the state of Florida in implementing K-12 computing. Some of the issues under consideration follow:

CURRICULUM FRAMEWORKS AND TEXTBOOKS - 1) How can appropriate materials and textbooks be determined and obtained. 2) What criteria will help districts make proper course selections? 3) What is appropriate training for teachers and how can it be accomplished? 4) Should there be high school computer science departments? 5) What is the best process to review and revise the frameworks?

SUMMER INSTITUTES - 1) Is an institute a good vehicle for teacher training? 2) Who should be hired as instructors and how much should they be paid? 3) What should be the course content? 4) How much should teachers be paid? 5) How should teachers be selected for follow-up institutes? 6) What conflict is there between institute participation and summer school employment?

MINIMUM STANDARDS AND SKILLS IN COMPUTING - 1) Of what value are minimum standards and skills? 2) How will districts obtain equipment and software? 3) Who will be responsible for teaching the skills and how will they be trained? 4) What can be done with eleventh graders who fail the computer literacy test? 5) How can the state mandate testing in an elective curriculum? 6) What about the obsolescence factor? 7) What is the best process to review and revise these standards and skills?

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University of South Florida
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COPYRIGHT AND YOU - AN UPDATE

Gary H. Becker
Director of Media Services
Seminole County Public Schools

Designed for those who have attended COPYRIGHT AND YOU sessions in prior years. Provides current information on such areas as networking, multiple-machine loading, video cassette rentals and purchases. Time is provided for the audience to ask questions and address specific concerns.

Those who have attended previous sessions of COPYRIGHT AND YOU have indicated a need and desire to be periodically updated on copyright information without having to be exposed to the entire background of the law and the specific permissive and restrictive activities included in COPYRIGHT AND YOU. They have also expressed a desire to be able to ask specific questions. This session is designed to meet the needs identified.

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INNOVATIVE APPLICATIONS OF MICROCOMPUTERS IN VOCATIONAL EDUCATION

Dr. Roger H. Lambert, Director

Vocational Studies Center - University of Wisconsin-Madison

The session highlights innovative applications and practices involving microcomputer use in vocational education. Included is information on hardware and software utilization, teaching strategies, high technology application and other items of interest to vocational educators. Resource materials are displayed and handouts provided. The presentation is based on the information and materials developed by the Vocational Studies Center, University of Wisconsin-Madison on microcomputer applications in vocational education. The Center has conducted five national conferences on the subject and has written five handbooks for vocational educators covering a wide variety of topics. The major themes of these conferences and handbooks included Microcomputers in Vocational Education, Microcomputer Applications in Vocational Education, Microcomputer Applications in Career Counseling, Instructional Strategies for Using Microcomputers in Vocational Education, High Technology in Vocational Education, Effective Microcomputer Assisted Instruction for Vocational Education of Special Needs Students.

A synthesis of these materials is presented along with displays of materials and resources to be used by vocational educators and administrators.

For Further Information Contact: Roger H. Lambert
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Managing Microcomputer Hardware and Software in a College Setting

Lawrence H. Poole, Vice President for Academic Affairs
SUNY At Cobleskill
Eleanor M. Carter, Director of the Learning Resources Center
SUNY at Cobleskill

This presentation will present suggestions for managing microcomputers in a college. A number of practical techniques in the following four areas will be discussed:

1. Administrative/management issues
2. Equipment use and maintenance
3. Software inventory and procurement
4. Supplies procurement and budgeting issues

The administrative/management issues will include the use of advisory groups, typical communication problems, long-range planning and projection techniques, clustering of microcomputers versus decentralization, faculty training and development, and staff support positions.

The discussion of equipment use and maintenance will focus on how an insitution becomes an authorized dealer for repair and maintenance purposes, the development of routine maintenance procedures that minimize repairs, the utilization of student help in maintenance and repair services, trouble shooting techniques, and security and control issues.

The topic of software inventory and procurement will concentrate on the development of a coordinated inventory system, copyright issues, and the start of a procurement clearinghouse which includes previewing arrangements, price negotiations, and software evaluation.

The issues to be presented in the area of supplies procurement and budgeting include the development of an inventory of parts for maintenance purposes, budgeting for and procurement of operating supplies, and the determination of what accessories must be purchased.

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Using Text Analysis Software in Teaching English

Nancy R. McGee, University of Central Florida
Michael C. Hynes, University of Central Florida
Bob Baird, University of Central Florida

Text analysis software has important applications in secondary English teaching both as a means of studying composition development and as a research tool for teachers. This presentation demonstrates these uses through an analysis of student papers and the discussion of various methodologies for incorporating text analysis into instruction.

By using text analysis software to chart the development of composition skills, the teacher may examine growth in such areas as sentence strength, sentence length, readability, vocabulary variation, and usage. Using text analysis software enables teachers to obtain research data for use in pre- and post evaluation, curriculum design, and remediation.

Finally, presenters will describe some cautions which should be observed in using text analysis to describe effective writing.

Contact for further information:
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University of Central Florida
Orlando, FL 32816

Using Strategy Games to Improve Problem-solving Skills

Martha H. (Marty) Hopkins , University of Central Florida

The purpose of this research study was to compare the effects of problem-solving instruction with strategy games across two variables: (1) the use of the microcomputer, and (2) the use of guided discussion. Forty-eight fourth grade students were divided into four treatment groups:

1. Played boardgames without guided discussion
2. Played boardgames with guided discussion
3. Played computer versions of the games without guided discussion
4. Played computer versions of the games with guided discussion.

Each group received instruction with five (5) popular strategy games for two hours each week for four weeks. Pretest and posttest performances were compared for each subject, resulting in a set of gain scores for each group.

Comparison of tese scores revealed that strategy games can be used to improve problem-solving skills and that the microcomputer versions of the games used seem to be as effective as the boardgame versions. Results relative to the use of guided discussion were inconclusive.

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VIPES - Video Interacting 'Personably' with Exceptional Student Education

Janeen S. Clinton, FDLRS/Alpha
Patricia Pendleton, FDLRS/Buccaneer
Pat Neff, FDLRS/Gateway
John Graham, FDLRS/Galaxie
Walter Cornell, Department of Instructional Computing Services

Summarizes the FDLRS Instructional Technology Network's effort to produce an interactive video cassette tape entitled "Microcomputer Adaptive Peripheral Devices for Handicapped Students". The product can be used for self-directed inservice for regular and Exceptional Student Education teachers and administrators.

A handout will be provided that includes:

a script of the interactive video

the SuperPILOT program that directed the Panasonic Video Tape Player/Recorder and Apple IIe Computer

a list of hardware and software requirements

a sample "pre-requisite" self-directed instructional packet for teachers

a bibliography of ERIC documents on interactive video

a partial list of other sites programming interactive video

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Camp Citrus - A Science and Computer Summer Program

Roberta E. Dilocker
Coordinator of Math/Science
Citrus County Schools

For the past two summers, Camp Citrus has been funded by a Summer Camp Grant through the Special Projects division of the Department of Education. This presentation provides an overview of Citrus County's summer science and computer camp.

The curriculum of Camp Citrus involved students working on a science project using the University of Florida for library research, the Marine Science Station at Crystal River for the collection of scientific data and the computer for analyzing the gathered information. Students in the camp used various software programs to test correlations, draw graphs, and write their research papers. These students received .5 high school credit in Research I (1700300).

Another group of students involved in the camp, studied BASIC computer programming. The computer was also used to demonstrate mathematical concepts that would be too cumbersome to illustrate by hand. These students received .5 credit in Computer Programming BASIC I (0201330).

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Teaching About Computers in Home Economics Education

Rosemere Baum, Florida International University

Teaching about computers usually means what are the components of a computer system and how do they work. This presentation approaches teaching about computers from a different perspective - what do individuals and families need to know about computers if they are to use this newest "appliance" in their homes? Home Economics program courses provide a unique environment for focusing on those concepts which address this need.

Using each of the five subject areas of Home Economics - family and child development, foods and nutrition, housing and home furnishing, management and family economics, and clothing and textiles - the presentation addresses topics related to computer use which could be included in each area. These topics range from selecting and placing equipment to using the computer as a learning tool.

Strategies for assisting individuals and families in the use of computer technology in the home will be presented.

Contact for further information:
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CASE STUDY: Implementing a Campus-Wide Network

Ronald C. Johnston
Director, Computer Services
Gulf Coast Community College

The process, the product, and the benefits of implementing a campus-wide computer network are presented in this case study of the development, implementation, and integration of the Gulf Coast Community College "Information Services Network." The network uses a fiber optic backbone between campus buildings and coaxial cable loops within these buildings to link micro, mini, and mainframe computers to provide users with wordprocessing, spreadsheet, data base, electronic mail, and programming language facilities as well as administrative access to student records.

Development of the network started in the Fall of 1984 with a comprehensive needs analysis, the results of which formed the basis for a multi-year Comprehensive Plan for Computer Services at Gulf Coast. Subsequently, detailed Network System Specifications were written taking into account goals, needs, and problems identified in the plan and existing campus computer facilities to be incorporated in the network. The specifications were used in the procurement and implementation of the network which became operational in August, 1985. Emphasis in the system design on functionality, reliability, responsiveness, and ease of use were significant factors in gaining user acceptance and integrating the Information Services Network into daily office and classroom life on the campus.

Developing the concept into a reality included overcoming some obstacles which are discussed in this presentation along with the benefits.

For further information, contact:
Mr. Ronald C. Johnston
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Panama City, FL 32401

...with LITERACY and justice for all.

Joe Carlisi
Marion County Community Education Center
438 S.W. 3rd Street
Ocala, Florida 32670

This presentation describes various teaching techniques used in Computer Literacy courses held at the Marion County Community Education Center. The Computer Literacy courses range in level from 4th graders to adults.

The session includes a VCR presentation showing in detail teaching techniques, a variety of software with its many uses and the classroom setup for maximum use and adaptability.

The specific topics covered are as follows:

1.	Keyboarding	(Typing Instructor, Typing Tutor III, color coding keys and teacher made worksheets also wall charts)
2.	Disk Operating System	(Tutorials and teacher made exercises)
3.	Problem Solving	The Factory, The Pond, Hot Dog Stand and Memory Castle)
4.	Basic Programming	(Tutorials and teacher made worksheets)
5.	Graphics	(P C Logo, handouts also Delta Drawing)
6.	Word Processing	(Friendly Writer, PFS Write, worksheets and exercises, also Sign Designer, Facelift and Fancy Font)
7.	Accounting	(Home Accountant Plus with worksheets)
8.	Database Management	(PFS File, Report and Graph also Nutshell)
9.	Spreadsheets	(Lotus 1-2-3 and Sideways with worksheets)
10.	Utility Programs	(Norton Utilities, Sidekick with exercises)

Each of these topics is covered by the presenter as well as by viewing the actual lesson on the video tape. During the session, the presentor discusses different approaches and teaching techniques while the video is being shown. Handouts and discussion time are available to all participants.

Contact for further Information:
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The Florida Department of Education Satellite Centers- What We Can Do For You!

Carolyn Adler, Florida Center for Instructional Computing at USF
James Shannon, Broward County Instructional Computing Center
Donna Baumbach, University of Central Florida Instructional Computing Center

The Florida Department of Education has funded three sites in the state to act as resource centers for educators. Each site has a different focus and this presentation relates information concerning satellite center projects and activities.

The Florida Center for Instructional Computing is located in the College of Education at the University of South Florida in Tampa. The FCIC's DOE related activities involve software evaluation. @MICRO, a database of over 500 evaluations of educational software, is available online through the Florida Information Resource Network, as well as in hard copy. The FCIC also presents software preview workshops throughout the state with software that is donated to the preview library. The software can be previewed at the FCIC on a by appointment basis.

The University of Central Florida Instructional Computing Resource Center focuses on computer literacy materials. Their efforts involve matching commercial materials with minimum performance standards in computer literacy. They collect information about curricula in computer literacy and disseminate this information through listings, newsletters and workshops.

Broward County is the home of the Instructional Computing Center for Staff Development. This center provides information and resources on instructional computing as it relates to staff development. A monthly newsletter is published with a variety of information and suggested articles of interest. A database of people with the skills for teaching computer in-services is in development. The Broward Center will be able to match training needs for schools with a person who has that knowledge.

Contact for further information:
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COMPUTER CREATED READING REVIEW: FROM SOFTWARE TO HARDPACKAGE

JAMES ROBERT VICKERS, FLORIDA CENTER FOR INSTRUCTIONAL COMPUTING

This presentation discusses the use of microcomputers and compatible software for the purpose of creating tutorials and multiple sensory instructional materials inclusive of cards, banners, worksheets, and transparencies.

In specific, the above is being discussed in relation to the Reading Review Project created by the Florida Center for Instructional Computing and presently impacting the reading program of four Highlands County Elementary Schools. The purpose of this project has been to create an inventory of support tutorials for teachers and supplemental skills for students. This package encompasses forty-seven reading objectives and is designed to be effective for both individual and group instruction. Included in the package are the following:

1. teacher documentation
2. instructional objectives
3. teacher scripts (actual instruction)
4. lesson activities (designed for individual and group)
   a. word cards
   b. word and sentence banners (some with artwork)
5. lesson exercises
   a. work sheets
   b. transparencies

During this presentation, hands-on experience is being emphasized. Therefore, those attending the presentation can expect to participate in a lesson demonstration. In addition, volunteers will be called on to follow a teacher script and utilize the computer-made materials - thereby, affecting a meaningful experience in relation to the objective of this presentation.

Contact for further information:
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Tampa, Florida 33620

BEST COPY AVAILABLE

I CAN WRITE: An elementary writing program for the One Page processor.

Michael Jeffries
University of Tampa and Florida Center for Instructional Computing

I CAN WRITE is a computer directed writing program designed to assist elementary students in acquiring word-processing skills while improving their writing abilities. The program was designed to be used in conjunction with the ONE PAGE processor which was developed at the Florida Center for Instructional Computing.

Teaching writing skills is an expensive process in terms of student time and teacher resource costs. I CAN WRITE is a program designed to minimize the amount of time required to acquire basic writing skills while maximizing the value of teacher involvement. The program currently consists of 60 open-ended writing exercises which have been correlated with the Florida minimum competencies in writing for students in grades one through four. Each lesson presents the student with a CRT screen which has been divided into two parts; an area at the top of the screen which contains instructions and samples and the remainder of the screen which is used for completing the exercise. Students may move freely through the exercise portion but are restricted from moving into the top portion of the screen. When students complete an exercise, the lesson and solution are printed and given to the teacher for evaluation. Any corrections or additions that may be necessary are easily accomplished by using the word-processor.

I CAN WRITE was written for use on the IBM-PC equipped with at least one disk drive and an attached printer. The program and lessons are stored on disk along with a teacher tutorial which describes the program and explains how to use the word-processor. External documentation explains how lessons may be created, deleted, or modified.

I CAN WRITE was developed at the Florida Center for Instructional Computing in the summer of 1985 and is currently being field-tested at several locations throughout Florida. Feedback from these tests will be used to update future versions of the program.

Michael Jeffries
University of Tampa
Tampa, Florida

BEST COPY AVAILABLE

The Use of Digitized Speach Synthesis For Word Recognition and Speech Development

Robert Vahan Alder, Florida Center for Instructional Computing
Lawrence J. Fitterman, Florida Center for Instructional Computing

This presentation will address the types of computerized speech and the development of a computerized speech program at the Florida Center for Instructional Computing. The use of phoenetic synthesized speech simulation as compared to digitized speech will be discussed in detail. Representations of both types of speech will be demonstrated and compared. The Speeking Bee, a computer program developed with the use of digitized speech, will be presented.

The presentation will demonstrate how Speaking Bee was developed and revised with sound programming and pedogogical techniques. It will be demonstrated how the program allows the user to record, edit, store on diskette, and replay their own spoken words. The presentation will show how The Speaking Bee program allows the user the opportunity to create drill and practice lessons that use both visual and auditory learning modalities for a class or individual student.

This presentation will address the educational uses of computer synthesized speech and the benefits of their use in the learning environment.

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Florida Center for Instructional Computing

Advanced Placement Computer Science - A Panel Discussion

Renee Henry, Department of Education
Marita Eng, Sandlewood High School, Jacksonville
Peggy Brenneman, North Miami Beach High School, North Miami Beach
Barry Felps, Wolfson Sr. High School, Jacksonville

This session will address various aspects of the Advanced Placement Computer Science course. Experienced teachers will discuss problems and successes in organizing and implementing this course. Particular concerns with appropriate hardware, classroom management, and suggested techniques will be discussed.

Information from this session should aid schools who are planning to offer AP Computer Science as well as help those teachers who are teaching the course at the present time. For these persons and others the answers to certain questions are valuable, such as:

1. How is the expense of the course handled?
2. Who pays for the students to take the AP test?
3. Do most colleges accept credit from AP courses?
4. How is a student prepared to pass the AP test?

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Personal Computer Applications Course

Norman T. Bell
Michigan State University

This presentation describes the development and implementation of a personal computer applications course. By definition, an applications course is one that teaches how to use a microcomputer, not how to program one. In this presentation the following topics will be discussed:

1. The selection of topics for the course.
2. The description of the integrated applications program selected.
3. The design of the teacher/learner support material.

The following topics are included in the course in the sequence given. It should be noted that for the most part each topic is built on the previous topics and therefore provides continuous reviews of all topics taught.

1. Introduction to the Microcomputer
2. Development of Keyboard Skills
3. Introduction to Word Processing
4. Electronic Transmission of Information
5. Information Retrieval
6. Data Base Systems
7. Data Analysis Systems
8. Use of Spreadsheets
9. Introduction to Computer Graphics
10. Introduction to Structured Programming
11. Applications in Business, Management, Education, and the Home

The computer applications program selected for the course was DeskMate, an integrated set of programs including word processing, spreadsheets, data base, telecommunications, scheduling, and electronic mail. These applications run on the Tandy 1000, 1200, 2000, 3000, Model 4, and Color Computer.

The teacher/learner support material includes a set of transparancies, a student guide, and an instructor guide. Each lesson contains the following elements: an overview, a set of objectives, structured notes including a review of previous materials and a summary of current material, a quick quiz, and a set of applications problems. Research related to the inclusion of these elements has been conducted and will be reported.

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High School Scheduling Program for the IBM PC Microcomputer

Lowell Centers
Principal - Marianna High School - Jackson County, Florida
John Allen, Jr.
Senior - Marianna High School

This presentation discusses a high school scheduling program written by an eleventh grade student in a turbo pascal programming class. The program schedules up to 2000 students on an IBM PC with 128K Ram and a Dot Matrix Printer. We discuss the steps used in the menu driven program from the initial input to the finished copies to be given to the students and guidance department.

The steps are briefly described as follows:

1. Making the decision as to the number of classes each student must take.
2. Inputing all courses offered with an abbreviation.
3. Inputing student requests and grade levels.
4. Assigning teachers to courses and classrooms.
5. Setting maximum and minimum number of students in each class.
6. Getting the tabulation of course requests.
7. Making a tentative schedule based on past experience with courses which conflict.
8. Run a conflict matrix and produce a printout.
9. Reassign courses based on conflicts and courses which will not schedule.
10. Reassign teachers based on the information provided by the computer.
11. Get a printout on the students and courses which would not be scheduled if the present schedule was used.
12. Make another reassignment of teachers and courses based on the above information.
13. Make a first run of the student schedules and get a printout.
14. Study the printout and decide either to accept it or make a few reassignments of teachers and courses in a final effort to get a higher percentage scheduled.
15. Drop and add students individually or in groups.

More details and copies of the printout are presented. Questions about the program are answered by the programmer.

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Group Response to Interactive Systems
G.R.IN.S.

James W. Tiller, Ph. D., Brevard County School System
Jerry Witter, Brevard County School System

This presentation describes a group gaming environment utilizing video cassette, video disc and microcomputer controlled information delivery.

The computer forms the class into three (3) randomly selected groups. Using instructions and strategies suggested to them by the computer, the groups organize and distribute the information. The system then initiates, monitors, evaluates and keeps a running record of a group competition gaming environment.

Drawing solely upon the information in the video presentation, the system, using a rotation access for the competing groups, asks questions and randomly selects group members to respond.

The G.R.IN.S. system reverses the traditional function of the computer as a repository and processor of information, to one of stimulating and monitoring an environment that encourages information collection and development in groups of humans.

The learning theory employed by the G.R.IN.S. approach assumes that the student is not to be directly confronted with what he needs to learn; instead, the student is placed into a carefully designed environment, the survival of which depends upon the individual and group ability to solve problems using information made available.

This approach accomplishes many significant training and educational objectives.

- Motivation is achieved through the attachment of group identity to competitive problem solving.
- Retention and creative development of information is enhanced through involvement in outcomes.

The hardware for this system consists of One (1) Apple IIe; One (1) printer; Four (4) Amdek color monitors; One (1) AG 6300 Panasonic V.C.R.: One (1) G.R.IN.S. format with interface card. The current purchase price is approximately $9,000 per system.

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Media Management Magician

Jimmy Maddux, Patterson 6th Grade Center - Bay County
Dorothea Wester, Haney Voc-Tech Center - Bay County

This presentation demonstrates and allows for discussion of the data base management program currently in use in media centers in Bay County, Florida. The presenters discuss various files which have been developed and used by media specialists in that district. Components of file design are presented and explained with opportunities provided for comments and discussion. Sample files are shown, their use is explained and the resulting reports that can be generated are also available for viewing.

This program was first acquired in Bay County for the purpose of generating a catalog of approximately 12,000 items of media housed at the District Media Center. Each school subsequently obtained the program, and additional files were developed cooperatively by the entire group of media specialists in workshop sessions conducted by lead media specialists who had become familiar with the possibilities of the program. Useful files that have been developed include:

- Media and equipment inventories
- Overdue media files
- Purchasing / renting review lists
- Indexing
- Bibliographies
- District media scheduling requests

Some of these have been developed for the unique needs of the media program in the vocational/technical school.

This program has the potential for application to other areas of school management functions, and files can be easily constructed, revised or adapted to evolving needs for generating data in specific forms. Time allowing, this will be expounded upon.

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Tough Choice: Selecting Generic Administrative Tools vs. Specialized Micro Programs

Robert C. Judd, Southeastern Louisiana University
Dorothy H. Judd, Southeastern Louisiana University

This presentation describes administrator responses to the dilemma posed by the availability of generic administrative tools versus specialized microcomputer programs for school administration. The generic programs considered are database programs, electronic spreadsheet programs, word processing programs, as well as other microcomputer programs for which templates can be designed or other adaptations can be made that provide nearly every answer needed by an administrator at a low direct cost. The specialized microcomputer programs considered are those that provide the administrative answers needed to such issues in school management as student record systems, finance systems, and transportation. These specialized programs tend to have a high first cost.

Specialized microcomputer programs for administrative use include:

- student systems - student records, daily attendance, mark reporting, student scheduling, student feeding, and student health;
- finance systems - accounting, payroll, property management, and activity accounting;
- transportation - bus routing programs; and
- utility programs - energy management, preventative maintenance scheduling, and facilities and equipment scheduling.

The differences between the needs of building principals and school district offices are discussed. The differences discovered involve not only microcomputer program choices but the techniques employed by administrators who use both specialized programs as well as generic administrative programs. The brands or publisher's versions in use and reaction to these programs are described.

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Teach Robotics Using a Robot You Can Build

Charles P. Schultz, Dade County Schools

This presentation discusses a project to develop a simple, inexpensive, easy to build robot that can be used for educational purposes. The project was done while pursuing a Master of Science Degree from Barry University. It meets the following goals:

1) Design a mobile robot with sensing capability that can be constructed from common electronic/electro-mechanical components.

2) Provide a guide to the purchase of the necessary parts and to the assembly of the robot from these parts.

3) Provide ways to interface the robot to commonly used classroom computers.

4) Provide a language by which the robot can be controlled.

How these goals were met is presented in detail using diagrams and operational descriptions. Applications of this robot in the classroom and possibilities for other robots are also discussed.

This material will be presented as part of a robotics course to be offered by Barry University starting February, 1986

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Project Micro: A Total Computer Experience

Alstene L. McKinney, Chapter 1 Educational Specialist, Dade County Public Schools
John Lavind, Chapter 1 Educational Specialist, Dade County Public Schools
John Johnson II, Chapter 1 Supervisor, Dade County Public Schools

The presentation details the procedures used to organize and implement Project Micro, a district-wide computer assisted instruction program. This progam is funded by E.C.I.A., Chapter 1 and utilizes Apple IIe computers. This program reinforces basic skills in reading, writing, and mathematics to fourteen thousand students in seventy five elementary schools, ten middle schools and six alternative schools.

The presenters describe through the use of a slide-tape presentation and a procedural manual how the program evolved to present day implementation.

The program is unique because (1) Each student is guaranteed twenty minutes of computer time per day and (2) it has an inservice microcomputer component which has trained over six hundred hundred parents, teachers, administrators and aides.

Session participants will receive guidelines for program development as well as suggested software lists and reading and mathematics software booklets that correlate with State Standards.

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Beyond Simple Logo

Kathleen E. McKinney
Tropical Elementary School
Brevard County

This presentation explains the following concepts through the use of suggested activities or examples: (1) how to set up super procedures and subprocedures, (2) the Total Turtle Trip Theorem, (3) the use of variables, (4) recursion, and (5) the STOP rule.

A super procedure is the master command which calls all other procedures. It is the plan for the entire design.

A subprocedure is a procedure that is used by another procedure. Designing projects with a super procedure and subprocedures, the top-down design technique, is one of the most significant and powerful concepts that one can learn with Logo.

The Total Turtle Trip Theorem states that to draw a closed polygon, the cybernetic turtle must turn through a total angle which is an exact multiple of 360 degrees before it can return to its starting position and heading. For example, the angle of rotation for a hexagon is 360/number of sides (360/6=60) for REPEAT 6 [FD __ RT 60].

A variable in Logo is a letter or word which represents any value. It is stored in the computer's memory and can be easily changed or varied. There are two ways to use variables in Logo: (1) with the MAKE command and (2) as inputs to a procedure. The latter use is the most common.

Recursion is where a procedure calls itself as a subprocedure. This is different from looping as used in the BASIC language. Looping performs the same action a number of times. Recursion, like looping, makes programming complicated designs much easier. The recursion command is usually the last line in a procedure. This type of recursion is referred to as tail recursion. When recursion is used, the procedure will continue indefinitely, unless halted by a CTRL-G (aborting the procedure) or by the STOP rule.

The STOP rule involves the Logo commands, IF and STOP. This type of command is usually called a conditional statement. This command is generally the second line in a recursive procedure.

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A Head Start in Computer Technology: How Release Time for Teachers Can Give Students an Advantage

Nancy G. Tucker, Staff Development Specialist, Shreveport, Louisiana
Don Fritz, Director, Vocational/Special Programs, Shreveport, Louisiana

This presentation describes an innovative approach to solving two common problems:

(1) how to provide time for vocational instructors to return to the "world of work" in order to keep up-to-date on computer technology, and

(2) how to provide exposure to computer applications for vocational students.

This computer application/on-the-job training update program, which began on a small scale three years ago at the Caddo Career Center in Shreveport, Louisiana, was initially funded by in-school funds. It is currently funded as a permanent program at the expense of the local school board. This program represents a cooperative effort between the staff at the Caddo Career Center and business and industry in the community.

The presenters provide for the participants a copy of the proposal, written to request funding for the project. Examples of student pre-computer lab questionnaires, lesson plans, two examinations and grade sheets developed by the current computer instructors are shared. The proposal contents, handouts, data collected from students' and instructors' evaluation, and staff and community cooperation are discussed. From this cooperative effort, students, instructors and the community benefit by providing for the advancement of computer technology in vocational education. Tying this session together is a slide presentation on the success of the career center staff in keeping abreast of computer technology for themselves and their students.

This session's implications are not only for career centers but could serve regular vocational classes in a comprehensive high school, thereby benefiting an entire school system's vocational program.

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ONE COMPUTER - THIRTY STUDENTS

Vicki Mace, Fairglen Elementary School
Donna Welton, Fairglen Elementary School

It takes classroom management, not computer expertise, to effectively incorporate the computer in the classroom. Classroom management represents a combination of organizational and management skills, techniques, and practices which teachers need to establish a classroom environment in which the computer can be used.

Why computer instruction is important has been ably explained in current literature and researched by noted educators. How the computer can be used in the classroom is the "now" problem for teachers. The purpose of this presentation is to offer activities and techniques to provide a guide and model for teachers to incorporate the computer in a learning environment.

The activities being illustrated are not intended to put teachers into a mold, but rather to help them create their own individualized method of using the computer in the classroom.

The presentation will focus on various types of scheduling devices to provide teachers with formats to assist them in budgeting computer time. A self-sufficient, color-coded scheduling system will be one of the many methods illustrated.

In addition, ideas for record keeping and evaluation are presented. Suggestions for storing software, various types of learning centers, and typing activities are also discussed. Charts, classroom lists, greeting cards, banners, letters, and other exciting classroom materials and teaching tools created with the "Print Shop" software by Broderbund will be displayed.

The initial success of our computer learning program is based on the ideas and techniques presented in this session. We hope the material discussed will be an aid to teachers who want to effectively use the computer in the classroom.

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Minimum Computer Knowledge for Elementary School Principals

Gregory C. Coffin, Director
URBAN SCHOOLS COLLABORATIVE
Northeastern University
Boston, Massachusetts

This talk presents the thesis that elementary principals must have minimal knowledge about computer applications in education if they are to remain or become educational leaders. The presenter, a former teacher, principal, and superintendent of schools, states that elementary principals need not be computer experts. Nor can they be computer illiterates and remain effective. He suggests that all principals need some knowledge of hardware, software, CAI, and micro-based administrative applications.

The hypothesis is based on the presenter's experience and observations in many schools, teacher/principal workshops, conversations with parents, and a continuing dialogue with professional colleagues. He states that the principal who is ignorant about computers cannot provide the leadership necessary to meet the educational challenges which have already been defined for the balance of this century.

The specific computer knowledge needed by elementary principals is defined. The process of identifying this body of knowledge is related through anecdotes in which the presenter was either a participant or a firsthand observer.

In the course of identifying and describing the necessary knowledge and skills, the presenter states why principals need this information and suggests some consequences of computer ignorance. He offers an outline of minimal computer knowledge for all elementary principals.

Dr. Gregory C. Coffin, Director
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Improving Professional Productivity Through Computer Utilization

Timothy J. Sullivan
College of Education
University of Central Florida

In this presentation teachers and teacher educators with access to a microprocessor and a modem are shown how they may improve their professional productivity in five areas including: preparation of class materials, communication, collaboration, writing for publication and research. Participants may have beginning or intermediate expertise since both effort and skill required to use these techniques are minimal. Almost any type of equipment can be utilized and it does not have to be the same brand as other equipment. In addition, the cost factor is little or nothing!

Many examples are shown whereby work can be performed either at home or in the work setting, as long as a local telephone line is available. Information can be accessed and manipulated for simple tasks such as producing and revising instructional materials. More sophisticated work can be undertaken by directly accessing data bases or by utilizing networks.

Opportunities for increasing professional productivity are suggested and detailed as to: use, availability, getting started and support.

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WHICH WORDPROCESSOR 4 U?

Simone P. Hebert, Broward County Schools
Liane J. Kravet, Miramar High School

We will help you solve the common problem people have in selecting the proper wordprocessor. The most expensive is not necessarily the most appropriate for you. This overview will enlighten you to the capabilities of the software as well as its cost factor. Hand-outs will be provided for all.

ADDITIONAL INFORMATION:

This presentation will provide the potential wordprocessing user with an overall picture of several different software packages. The goal of all wordprocessors is to produce a perfect finished product that has been entered, edited, saved and printed. What users find most exciting and useful about wordprocessing is that the finished product can be retrieved at anytime for repeated use in its original or revised version.

There are many different facets of a wordprocessing program that need to be addressed before the final selection is made. These facets include:

1. age level of the user
2. hardware available
3. hardware needed
4. generic features
5. special features
6. cost

The applications of these products can only be limited by the user's imagination!

The goal of this presentation is to enlighten the participants about wordprocessing in general and to aid in their search for the wordprocessor that fits not only their specific needs but is within their financial reach.

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Computers In The Hospital Classroom, "Is It Time For School Yet!"

Lynne Edelman Faimalie, Pinellas County Schools
Barbara Mamouzelos, Pinellas County Schools
Brenda Michiniewicz, Morton Plant Hospital

Little is known about the effectiveness of the microcomputer in the treatment of hospitalized psychiatric youth. To date, there has been little documentation in this area. Presentors will share their findings based on 15 months of computer usage in the hospital's locked psychiatric unit's classroom.

Major findings, documented overtime but not formally assessed, indicate that many positive classroom behaviors were displayed while using the computer. Students using the classroom computers often displayed increased on-task behavior, worked cooperatively with peers and actively participated in educational decisions. Additionally, many of these behaviors carried over to the general classroom setting, suggesting, perhaps, even more benefits than initially recognized.

Presentors will describe the setting, program, and results of student utilization of classroom computers. Audience participation is encouraged.

Lynne Edelman Faimalie
Teacher, Roebling - 2
Morton Plant Hospital
Clearwater, Florida 33517

Computer Graphic Solutions to Various Mathematical Puzzles

Douglas Woolley, Florida Center for Instructional Computing

This presentation demonstrates basic algorithms to solve seven popular puzzles, including Rubik's cube. The algorithms are derived from elementary group theory. Computer programs containing the puzzle solutions are discussed and demonstrated. The computer displays a step-by-step graphical solution after a puzzle's appearance is entered.

This project was named into the Westinghouse Science Talent Search Honors Group in 1984, and Doug Woolley, the author, was named as one of the top 300 high school scientists in America. The computer solution to these puzzles is based upon this philosophy: Anything a person can logically develop an algorithm for, a programmer can instruct a computer to do. With this philosophy in mind, the author developed general algorithms for solving puzzles such as the Rubik's Cube, the Magic Ball, the Picture Cube, Rubik's Pocket Cube, the Pyraminx, the Missing Link, and the Whip-It, all of which appeared in stores after the Rubik's Cube craze. After the general algorithms were conceptualized, programs were developed that computerized the algorithms.

Each program guides a person by first describing the puzzles and then providing graphical illustrations of the solution. Each program demonstrates the power and versatility of the computer by having it solve a problem that can be appreciated and understood by people of different ages and intellects. Each puzzle represents a simple mathematical tool that can improve eye-hand coordination and spatial perception. Using programming to solve them brings a new dimension into abstract manipulation.

In the presentation, the definition of a "group" is explained in elemantary terms using visual demonstrations with the puzzles. An indepth description of the characteristics of each of the seven puzzles are discussed. The overall strategy and specific subroutines used in the programs are also discussed. The presentation concludes with a hands-on computer demonstration to solve several randomized puzzles.

After the presentation, ten free Apple diskettes, with the complete program to solve these puzzles, are randomly distributed to those in attendance.

Contact for further information:
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What does RESEARCH compute for computers?

Sheila F. McNeill, University of South Florida

This presentation discusses results of research studies concerned with effects of computers and computer-assisted instruction in elementary, secondary, and college situations. The purpose of the presentation is to examine the belief among both educators and the general public that microcomputers improve the instructional effectiveness of schools.

The microcomputer bandwagon has been a product of highly successful mass marketing strategies carried on by hardware and software manufacturers, not an evolution from within the education field. When Time magazine named the personal computer as the "Man of the Year," the popularity of microcomputers was assured, and many parents, feeling that computers were necessary for their children's educational success, pressured schools to acquire microcomputers despite the fact that there was little research supporting their cost-effective utility and few educators trained to use the technology.

Since the advent of microcomputers in the classroon, researchers have carried on experimental studies to determine computers' effectiveness, and recently, researchers have integrated independent evaluations of computer-based teaching and have reported the results in meta-analyses.

In addition, the Southwest Educational Development Lab, Austin, Texas, has produced an in-depth review of the literature which synthesizes articles and abstracts identified as education-oriented microcomputer research studies published since 1979, and groups specific research studies by areas such as general learning, computer literacy, mathematics, music, reading, science, and typing.

Contents of the meta-analyses, in-depth literature reviews, and individual research studies are the basis for the discussions in this presentation.

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Looking for the Right Stuff - Computer Software for MBS

Joanne Croniser, Floranada Elementary, Broward County
Larry Barretto, Cresthaven Elementary, Broward County

With tight school budgets and hundreds of computer programs to choose from, the presenters realize that careful evaluation of software is important if the programs purchased are going to be useful and effective. The presenters share their experiences in searching for and evaluating computer software for use in remediating and reenforcing minimum basic skills in math, reading, and writing.

Features to look for in software and support materials, as well as a sampling of programs the presenters have used to remediate skills, are considered. In addition, suggestions of how to catalog and reference the software for use by teachers are offered.

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